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THE JAPANESE SOUTH POLAR EXPEDITION OF 1911-1912

A little-known Episode in Antarctic Exploration

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TO most people who are interested in things Antarctic the name of Shirase will probably be familiar, but beyond a vague idea of his South Polar Expedition little is known of this fine undertaking outside Japan, and even there not very much. A short résumé of an account written in Japanese will therefore be of interest as a contribution to Antarctic history.

The present article is a free adaptation of an abbreviated account of the expedition contained in Vol. II (*Nan-Kyoku-tanken*, i.e. South Polar Exploration; by M. Harada and O. Matsuyama) of a twelve-volume compilation entitled *Sekai Tanken Zenshu*—literally "World Exploration Complete Collection." The part dealing with the Japanese Expedition of 1911-1912 is headed simply *Shirase Chui* (Lieutenant Shirase) and is based on a special fully illustrated account of the expedition entitled *Nan-Kyoku-ki* (South-Pole-report), edited by *Nan-Kyoku-tanken Koen-Kai* (Association of Supporters of South Polar Exploration). The accompanying illustrations are reproduced from the latter work. The writer feels bound to apologize for the transitions, at times somewhat abrupt, from narrative to diary and *vice versa*, which he has been unable to avoid.

Mr. Choku Shirase, lieutenant in the Japanese Army, had long dreamt of organizing a South Polar Expedition, but the difficulties of its realization seemed insuperable until he succeeded in interesting Count Okuma in his plan. Geographical exploration is still rather an unfamiliar experience in Japanese life. During the Tokugawa Dynasty to leave Japan was strictly prohibited under penalty of death, and even in 1910 Mr. Shirase could reckon on no public support for his plan, so that his expedition was entirely dependent on contributions subscribed by private individuals.

A small three-masted schooner of 204 tons, the *Hoko Maru*, was purchased, and on the proposal of Admiral Togo, the hero of Tsushima, renamed *Kainan Maru*, i.e. the "Opener-up of the South." The *Kainan Maru* was altered for purposes of exploration in 1910. Originally a sailing vessel, she was thoroughly overhauled and refitted by the South Polar party, who installed an 18 horsepower auxiliary steam engine. Built of wood, she was first rigged as a regular barquentine (three-masted schooner with square-rigged foremast), but at Sydney was converted into a fore-and-aft schooner with triangular sails. Her length (between perpendiculars) was 100 feet, her beam 25 feet 9 inches, her depth (from keel to deck) 13 feet, draft not given.

The ship was strongly built for ice-navigation, the keel being of zelkova covered on both sides with pine; the frame and side planks of zelkova and cypress, the stanchions of pine. The sides were constructed of two layers of 3½ to 4 inches thickness, covered by a layer of felt and iron plating. The bows and stern were protected along the water-line by an additional layer of wooden planks for one-quarter of the ship's length; the stem-piece was covered by an iron sheath.

Under a display of bunting, with the national ensign, the Sun-flag, and the special flag of the expedition, with the Southern Cross for emblem a-top, the ship left Tokyo on 29 November 1910, and, after having called at Tateyama Bay for trimming her cargo, left Japan on 1 December 1910, full sail southwards. From the very start the explorers were much hampered by constant bad weather. They crossed the Equator on December 29 and reached Wellington, New Zealand, on 7 February 1911, where they met with a cordial reception on all sides, private and public. Here they procured fresh supplies and shipped 32 tons of coal and 36 tons of drinking water.

They left Wellington on February 11, meeting the same bad weather as before, a very rough sea and heavy gales unrelentingly pursuing. For the first three days the waves were of a height never seen before by the ship's captain. Nomura, a sailor of many years' seafaring experience. The little *Kainan Maru* was like a toy played with by the furious elements. On the 15th the sea was calming down considerably when a dense fog set in lasting for a couple of days. A curious feature recorded at this time was a general attack of headache which could not be accounted for. One day a queer animal was observed swimming

towards the ship's side; it was scooped on board and identified by one of the naturalists as a penguin.

February 24, 1911. Weather showing signs of improving.

February 26. First iceberg appeared.

February 27-28. Navigation difficult on account of icebergs and drift-ice. Canvas reduced by half and fires lit under boilers. Ice of all sorts was met with, brash-ice and icebergs of every size from giant bergs down to ice-blocks. A faint shimmer of aurora observed.

March 1. Brilliant aurora. Iceberg encountered some 300 feet high with a circumference of about 3 miles.

After many vicissitudes in very variable weather, with dense fog, rough sea, heavy snowfall, and other polar conditions, land was finally sighted on March 6 in a south-south-east direction about 40 miles away off the Admiralty Range of Victoria Land. The sea was studded with numberless drifting bergs, of which one running on the same course as the ship was about 250 feet high. On top of these bergs hard wind-beaten snow made a beautiful sight.

March 8. Off Dorset Point, about 6 miles away. Landing was impossible, so the ship proceeded past Possession Islands.

March 9. Drifting pancake ice met for the first time. Small ice-plates strikingly like lotus leaves which gradually grew thicker, up to 12 feet, assuming the shape of tumblers. To starboard Coulman Island now came in sight. The compass needle here was wildly disturbed. An observation of latitude gave 73° 26' S. Penguins in numberless flocks, also marine animals.

March 11-12. Continuous snowfall with, at times, strong gales. Weather exceedingly unsettled. Changes would take place in the twinkling of an eye. At midday the ship came into heavy ice. Position 74° 16' S. and 172° 7' E. Here progress came to a stop. The situation had become critical, and there was nothing for it but to beat a retreat, the danger of being frozen up being imminent. Every moment was valuable, but thanks to the fine seamanship of Captain Nomura and his crew they succeeded at the very last moment available in dodging round and getting out again: a very narrow escape on which the Japanese author dwells at length. If they had been ice-bound at that juncture it would probably have meant death to all, seeing that the expedition was not fitted out for a wintering. The ship suffered some material damage through this unforeseen struggle with the ice.

The ship's company were indescribably dejected at this failure of their undertaking, but for the time they had to be satisfied with what they had achieved. They had cruised along part of the coast of Antarctica, and from the crow's nest the chief officer had as far as possible observed the interior of the land of which he gave a description.

Heavily downcast they had to wend their way northward again, and after a very rough passage the *Kainan Maru* entered Sydney Harbour, New South Wales, on 1 May 1911.

At this time the general feeling of the Australians was strongly anti-Japanese. The reception with which the Shirase Expedition was met was not agreeable, the more so as the press was hostile. Happily these misgivings were soon scattered; indeed, the authorities finally went so far as to grant the expedition the favour of considering their vessel as a foreign government ship, giving her good berthing accommodations and exemption from harbour dues.

In a suburb of the town in a fine grove of trees a site was gratuitously assigned to the Japanese visitors by the owner, and here they erected their own hut. This site commanded a most glorious view of Sydney Harbour. The hut, which was intended for Barrier life, had been the object of much deliberation and experiment, and was solid and commodious enough for its original purpose, but it seems inconceivable that it could accommodate as many people as the whole crew. Still, when finished it seemed to them quite a palace, especially at night when they were lying on their mats on the floor—so infinitely more agreeable than the shelf-like bunks on which for such a long time they had made shift to sleep in the *Kainan Maru*. On 17 May 1911 Captain Nomura with one of the staff left for Japan to report on the present state of affairs.

The camp life on land soon became intolerably monotonous, the frugal repasts being their only diversion. Their staple food was rice, beside which they had quite a varied store of preserves and a small quantity of vegetables. But, however lonely and tedious this kind of life might seem, never a word of discontent was heard. The determination of the expedition was unabated, although in Japan there were many who doubted the advisability of a renewed attempt to push southward.

On October 18 Captain Nomura came back from home with a fresh stock of provisions and supplies; later on some new members of the staff, and twenty-nine dogs from Karafuto (Sakhalin), arrived, and some of the crew had to be sent home on account of sickness.

The original plan of the expedition comprised a dash towards the Pole itself. This plan was now modified, both Scott and Amundsen having probably in the meanwhile started on their race for this goal. The principal aim of the Japanese expedition was now concentrated on scientific exploration. From quarters at home interested in the undertaking, a landing at lat. $77^{\circ}12'$ S. and about 160° W. was suggested as the proper first step. From this point exploration might be carried on in a south-easterly direction. Further, a coasting party was to be organized for exploration in Edward VII Land, while the *Kainan Maru* went on a surveying cruise as far eastwards as possible. As will be seen, this programme was thoroughly carried out.

The personnel and scientific staff of this second part of the expedition were as follows: Shirase, leader of the expedition; Takeda, leader of the scientific staff; Ikeda, naturalist; Mii, physician; Yoshino, in charge of clothing, equipment, etc.; Nishikawa, steward; Nuramato, secretary; Tada, assistant naturalist; Watanabe, cook; Taizumi, cinematographer; Yamabe and Hanamori, in charge of dogs.

Mr. Takeda, chief of the scientific staff, made use of his opportunities for conferring with Professor (now Sir) T. Edgeworth David, Professor of Geology at Sydney University and a member of Shackleton's Expedition of 1907-9, who took a great interest in the Japanese undertaking.

After a stay of more than six months in Sydney the *Kainan Maru* sailed on 19 November 1911 provisioned for over two years. At Shark Island the last visitors who had come to wish success to the expedition went ashore, among them Professor David.

At first the *Kainan Maru* had a good run with a fine spell of weather. On December 3 she was off the Auckland Islands, and here the ship was accompanied by innumerable flocks of sea-birds of all descriptions. On December 9 the temperature dropped to zero.

December 10. First snowfall.

December 11. First iceberg observed, shaped like a Latin M, the ice being of a rotten consistence. Met further on with a long row of big icebergs, like a line of battleships in column, a most impressive sight. This squadron of rotten ice had scattered the sea with an enormous mass of blocks of all imaginable shapes, making navigation very difficult, especially as the ship was still under sail only. The continuous jolting against the ice booming like the firing of cannon was very trying to the nerves.

December 12. The snowy petrel made its first appearance. On top of the white icebergs black specks were seen in great number: they were penguins.

December 13. Sea all round, an endless white plain. In the night the ice grew considerably thicker and gradually became more cumbersome, but a gale sprang up, sweeping the ice away. Quite a sensation was created by a sudden lighting up of the ship's starboard side accompanied by a fall in temperature to 7° F. equally sudden. All who were below came rushing on deck to learn the reason: an iceberg about 350 feet high some 6 miles off.

December 16. At 9.40 a.m. a gunshot was heard. One of the Ainus had lodged a bullet in a seal, but not mortally. A young sailor, Shibada, who had been with Gunji, a noted adventurer, in Kamchatka waters, stripped off his clothes and jumped into the icy sea in order to dispatch the seal at close quarters, with the result however that he soon had to be rescued, his limbs becoming totally numb. For this feat of hardy manliness the young man was rewarded by the leader with a tin of fruit.

December 21. The Antarctic Circle was crossed in the morning east of meridian 177° E., the course being south-east. A very long white iceberg showing on the horizon was heralded by a sudden drop of temperature followed by a furious blizzard.

December 22. At midday meridian 180° was passed and the ship entered west longitude, but only for a day. The end of the great berg was still out of sight.

December 23. The course was shifted to south-west and the navigation through pack-ice became so very difficult and tiresome that the nerves of the captain and his crew were put to a very severe test. Penguins and seals were met in numberless flocks. The ship was now drifting into the current, crowded with pack-ice, running along the coast of Victoria Land. A furious blizzard arose from the south, making a heavy foaming sea. Most uncanny.

January 1, 1912. In Japan and China more attention is paid to the New

Year than in any Western country. All men were about from the break of day dressed in their best. Everything on board tidied up and trimmed as best they could. A procession of all hands through the leader's cabin paid respectful homage and obeisance to Their Majesties in effigy, besides observing the usual ceremonies of the season. The festival dinner was very sumptuous, with a number of dishes principally consisting of fish. Thus sea-bream was served in eight different ways. Every one was in high spirits and the ship resounded with hearty laughter. On both January 1 and 2 a strong wind was blowing.

January 3. The weather improved greatly and the gluttonous birds were again on the wing, and the cry of "Land, Land" was heard. For the first time the leader and the captain were seen smiling. Through a rift in the cirro-stratus clouds they could barely see the vague outline of a mountain range, with very high pinnacles in the centre. They were off South Victoria Land, and the range seen was the Admiralty Mountains with their soaring peaks, those of Adam, Minto, and Robinson, and others of more than 10,000 feet and of great grandeur and beauty.

As they passed along the coast the land unfolded. The ice-plains at the south end of Robertson Bay came in sight. Cape Adare was passed in the morning. The white shape of Whewell appeared ahead, as Mount Sabine receded behind. To the west in the beams of the sinking sun the silhouettes of Possession Islands stood out in relief, looking rather like hats. The waves of the Ross Sea are quite different from those of the Pacific Ocean: they seem as if they were oiled. At 0.55 a.m. the altitude of the sun was $3^{\circ}30'$ above the south horizon. The light-intensity of the sunbeams differs in the morning and in the evening.

January 4. Coulman Island showed to starboard.

January 5. A big seal was shot. It was turned to good account, all of it to the very bones, giving food to the dogs, fuel, etc., and the naturalists examined its entrails, finding that the animal lived on cuttle and other fish. About a hundred parasites of some 2 inches length were found, and also a considerable number of "white bullets," i.e. undigested fishes' eyes. Two penguins were caught alive. By way of reward an extra treat, consisting of a glass of brandy, was served to each man. The penguins were killed and stuffed. In their crops three stones were found: means for furthering digestion.

January 10. At 2 p.m. the look-out in the crow's nest called out: "An ice-wall in sight!" From deck nothing could be seen of it. The height of this wall was about 200 feet, stretching uninterrupted like a curtain along the horizon to starboard.

January 11. The ice-wall was approached within about 3 miles. In the



Route of the Japanese South Polar Expedition in the Ross Sea

evening a beautiful atmospheric phenomenon was observed: the sun with four mock-suns around it, beautifully coloured.

January 12. Fast approaching the Bay of Whales, but navigation was very difficult because of floating ice compelling an endless zigzag course.

At 3.30 p.m. the ship was attacked by a school of twenty killer whales, apparently believing that the unfamiliar object was a whale. As soon as they became aware of their mistake they quickly withdrew slouch-eared. This ridiculous event led to another not less so. These killers, the most cruel and cunning beasts of prey of all, are considered by the Ainus as angels of God, and consequently the two Ainus on board the *Kainan Maru* were lost in fervent prayers to and devout worship of these devilish animals during their attack.

January 13. Twenty-two seals killed.

January 15. Ship ice-bound till the following day. Proceeding eastwards the ship went so near the Barrier that the distance was sometimes reduced to one mile only.

January 16. At 7.23 a.m. a sharp point of the Barrier edge was rounded and the ship entered a small bay well suited for a landing. A party of four men with Mr. Takeda as leader went ashore directly and climbed up a steep hill which proved to be the end of a big glacier about 24 or 25 miles in length. The surface on top looked like an even plain, but was nevertheless most dangerous. One of the men fell into a crevasse but was fortunately saved. No march southward from this side could be thought of. This glacier was named "The Four Men's Glacier," and the bay was named "Kainan Bay." Position lat. $78^{\circ} 17' S.$, and long. $161^{\circ} 50' W.$

The ship now left Kainan Bay, steaming westwards. Most unexpectedly a ship hove in sight some 20 miles away right ahead. "A pirate," it was suggested. It soon however turned out to be the *Fram* of Captain Amundsen. The *Kainan Maru* now shaped her course for the Bay of Whales. She could not get far in though, the ice-belt being still very broad, and had to stop at the eastern edge of the floe-ice at the mouth of the Bay. The *Fram* anchored about $1\frac{1}{2}$ miles to the west. The distance to the Barrier at the end of the Bay was estimated at some 15 miles. The surface of the Bay was one single floe ending in a low wall running west-east at the mouth of the Bay. This extensive plain was dotted with seals and penguins, while snowy petrels circled overhead.

The landing of the "Dash Patrol" was rather a hard job. The outfit of each man was as follows: three shirts, a pair of drawers, a suit, a warm cap, mits, goggles, boots with a felt lining, and a long stick. They were supplied with sleeping-bags of dog fur, the hairy side inwards, covered on the outside with cloth. A landing of reconnaissance was first undertaken, of which the following description is given: The march across the sea-ice belt took about an hour; the men perspired so much as to dim their goggles. The aspect of the Barrier, some 200 feet high, was most uncanny, the more so as blue-brownish vapours were flickering like flames overhead. Here were tracks of avalanches, and ice-blocks fallen down or threatening to fall. The sea was in a constant lazy movement occasioned by these blocks as they "calved" off the ice-wall; here and there a seal showed its face. The ascent of the Barrier was undertaken in three parties. It was difficult, but the view from the top was impressive; seawards the Bay with two vessels, a picture in black and white, and landwards endless ice plains. This excursion being made for reconnoitring only the party now returned to the ship to make all things ready for the "dash" southwards. They had got so sunburnt as to look like negroes.

The details of the preparations for the coming inland expedition need not be dwelt upon here in any great detail. It should be noted that their mits and stockings were of cotton, not wool. The total weight of their provisions, clothing, utensils, etc., was in the neighbourhood of 750 kilogrammes. The carrying capacity of the dogs was rather more than 26 kilogrammes each. Both hand sledges and dog sledges were used. The former were 4 inches high, 1 foot 5 inches broad, and 4 feet long. The dog sledges were 7 inches high, 1 foot 8 inches broad, and had iron runners. The teams were driven in line, one behind another alternating on either side of the rope. Some of the party suffered from snow-blindness, so that special attention was given to goggles. To avoid dimming of the glass by perspiration a sort of cloth covering was applied. Furthermore, glass of various colours to be changed every three or four days was used, as the constant use of a single colour was considered to harm the eyes. Cavalry boots of an experimental kind ("velvet") proved to be insufficiently warm, and strawboots were then used for ice walking. Even through these however dampness and cold permeated too freely, but they were very useful in ascending and descending ice-slopes. The Advance Party used high sealskin boots of Ainu make, which being completely waterproof were superior to any other sort of footwear.

One day the landing party had a most disagreeable surprise in seeing part of their stores landed on the ice suddenly go adrift, and the recovery of them was very dramatic and exciting. Intercourse with the Norwegians took place when Captain Nomura with the young apprentice as interpreter went on board the *Fram*, a ship which impressed him greatly as an ideal vessel for a polar expedition, and afterwards in his conversation he frequently reverted to

the *Fram* and her enviable perfection in every imaginable respect. On the other hand, two of the officers of the *Fram* visiting the *Kainan Maru* were agreed that sailing to the Bay of Whales in such a craft seemed sheer madness, and that they would not venture to go in her half the distance. They were however strongly impressed by Captain Nomura.

January 19. Ice having drifted out, the *Kainan Maru* got up to near the foot of the Barrier and the landing of the shore party was proceeded with.¹ It consisted of seven men, of whom two were to stay on the Barrier edge as a base, carrying on meteorological observations, whereas the rest, five men with Lieutenant Shirase at their head, were to form the proper "Dash Patrol," the Advance Party.

While the *Kainan Maru* was gradually disappearing over the horizon the seven men had finally worked their toilsome way up the steep slope of the Barrier, where, at a point some 2 miles distant from the coast, they set about raising a tent to serve for their base of operations. Its position is given as lat. $78^{\circ} 33' S.$ and long. $164^{\circ} 22' W.$ The tent was pitched on the bottom of a depression of about 4 feet which they dug out. A snow wall was built for further shelter. At a temperature of $-13^{\circ} C.$ a charcoal fire was kindled in a brazier. Owing to a mistake the party lost count of the time, and their first "breakfast" of sea-bream, *miso* (i.e. bean paste), and *miso* soup was taken at midnight. The mistake rectified they went to "bed" again.

January 20. Leaving Muramatsu and Yoshino behind at the tent, the "Dash Patrol" proper, consisting of the leader Shirase, with Takeda, Mii, and the two Ainus Hanamori and Yamabe (dog experts), left their base at midday, the dogs hauling the sledge. Marching was very toilsome, the more so as they were attacked by a furious blizzard, forcing them to camp. The distance covered was less than 8 miles. Tents should be coloured green, as were those of Shackleton, but green canvas is not durable when the tent is heated for cooking.

January 21. No progress made owing to bad weather.

January 22. The dogs lagged somewhat on account of the overweight they had to haul. Men therefore pushed behind, but it did not help much; the dogs were soon again exhausted, and there was nothing for it but to lighten the sledges, and part of the gear was cached in the snow, a red flag being planted above for a mark. The compass proved wild, because of some objects of iron too near it. At 9 p.m. something like a mountain was seen to the south-west. Takeda and the two Ainus set off to examine this mountain, which turned out to be an ice-wall of some 200 feet above sea-level. About $15\frac{1}{2}$ miles were covered this day.

January 23. Making headway, moving on the up-grade. Dogs very fit, making an excellent haul. In the course of the march the men took off one shirt after another, but after a moment's halt the cold immediately froze them to the quick. The dogs were now much done. A blizzard had sprung up; but the distance covered this day was about 22 miles.

January 24. The somewhat prolonged stay in the tent during the blizzard was extremely disagreeable owing to the humidity. The fur clothes made on the military model proved very good and answered the purpose well. The surface now proved most difficult, the strong wind having beaten the snow hard; small hummocks of ice had formed, constantly threatening to capsize the sledges. The frame of the compass was broken, and it took the men a good while to repair it with their stiffened hands at a temperature of $-18^{\circ} C.$ At 7 p.m. the temperature had fallen to $-22^{\circ} C.$ One of the dogs got frostbite in one foot, and, two other dogs being already sick, only twenty-seven dogs were now available for hauling. Distance covered $23\frac{1}{2}$ miles.

January 25. A heavy blizzard again raged. Communication between the two sledges was broken off, a most critical situation for one of them, seeing that all provisions were loaded on one sledge only. Temperature $-25^{\circ} C.$ After much seeking and halloing without result one of the Ainus discovered traces of blood from the frostbitten dogs and other marks of dogs, and communication was re-established. The weather grew more and more dirty, and it was resolved to camp. It was impossible to get the dogs inside a tent. They would lie in the open, letting themselves be snowed up. The blizzard was so heavy that it was simply impossible to go outside the tent. The drizzling snow crept in everywhere, forming small sastrugi on the sleeping-bags. Temperature $-22^{\circ} C.$ Distance covered 21 miles.

January 26. Blizzard increasing. The dripping from the tent walls when preparing meals was very disagreeable. Taking stock of the provisions, the party found that they would last for only two days more outward march, when they would have to turn back. Another dog frostbitten. Distance $13\frac{1}{2}$ miles.

January 27. At 2 a.m. first rest, starting again at 5.30 a.m. To the east four peaks were sighted. For about two hours the men now marched in this direction, when they again shifted their course, having satisfied themselves that the appearance was only a mirage. Distance covered during last night and to-day's

¹ The *Kainan Maru* here reached her southernmost point, viz. $78^{\circ} 34' 30'' S.$ The *Fram* reached $6' 30''$ farther south, $78^{\circ} 41'$, a record which she held up to 1925, when it was beaten by the Norwegian whaler *Star III* (Captain Iversen) which reached $78^{\circ} 46'$. All these high latitudes were reached in the Bay of Whales.—I. H.

fore- and afternoon totalled rather less than 30 miles. At 6.30 p.m. the party set off again due south. Dogs now exceedingly tired, men had to stagger along on foot, worried by the nasty hummocky surface. Temperature -12° C. Puffing and panting they plodded along until the next day.

January 28. At midday the "Dash Patrol" had come to the end of their tether and had to turn. The last two stretches were about 27 miles and $2\frac{1}{2}$ miles. Thus the total distance covered on the outward journey amounted to something in the neighbourhood of 160 miles. The position of this extreme point of the advance, according to observations taken by Takeda, was lat. $80^{\circ} 5' S.$ and long. $156^{\circ} 37' W.$ At this point they made a cache in which they deposited a copper case holding a list of the names of the persons who had been instrumental in the realization of this Japanese South Polar Expedition. And they raised a bamboo pole from the top of which the national Sun-flag was flown revolved by a red-painted triangular weather-vane of tin. They paraded before the Sun-flag and raised a threefold *Banzai* for His Majesty the Emperor, and the region around within eyesight was named "Yamato Setsugen," i.e. Yamato Snowplain, Yamato being the poetical name for Japan.

January 29. At 2.30 p.m. the party started on the return journey which, compared with the outward march, proved relatively easy, and they reached their base just as a fog was forming on January 31, after an absence of twelve days spent in hard marching. The *hoosh* served by their two comrades was more than freely accepted and partaken of, whereupon they turned into their bags and slept for thirty-six hours on end.

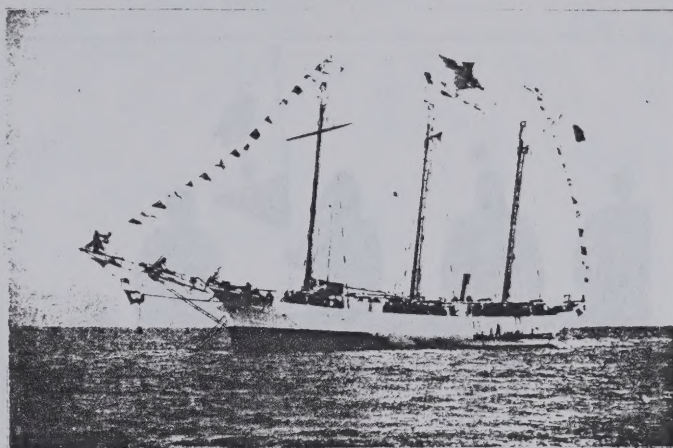
During the absence of the advance party the two men at the base had carried on various kinds of meteorological observations. The temperature had been down to -23° C. One day, some 3 miles south-west of their base, they observed ski tracks, and, walking 7 miles farther, they came to a tent, which proved to be a look-out point of the Amundsen Expedition. But the tent was empty and nobody appeared to satisfy their curiosity. In about half an hour the *Fram* how just in sight, entering the Bay, and at the same time some men came along the shore on ski, which in the Japan of that time were practically unknown. The two Japanese were much impressed by this mode of locomotion, which they had never seen before, reflecting on the possibilities lost to their own expedition by their absence.

February 3. The *Kainan Maru* was sighted in the morning, but not till next day was she able to get up to the Barrier and take the Advance Party on board.

After having landed the Advance Party (the "Dash Patrol") in the Bay of Whales, the *Kainan Maru* left this Bay on 19 January 1912 at 5.30 p.m. bound for Edward VII Land, which was sighted on January 23 at 7 a.m. It was a grand view they had before them, a range of white defiant pinnacles soaring towards heaven. At 4 p.m. they anchored in Biscoe Bay in lat. $76^{\circ} 56' S.$ and long. $155^{\circ} 55' W.$ Before them lay the Alexandra Mountain Range in all its majesty. The upper part of this range is divided into three separate mountains, of which the central one is the highest.

Two shore parties were formed, one of four men with Tsuchiya, the chief officer, at the head, and one of three men. Having crossed the ice-foot they had to scale an ice-wall, at first going due south, after which they turned westwards. The Tsuchiya party turned due south again to climb a steep ice-wall 200 feet high, but were defeated.

The other party went south-westwards. After having gone a couple of miles they came across traces of birds, which they followed, meeting at length



The "Kainan Maru"

a flock of Emperor Penguins showing no signs of fear. One of the men presumed to "shake hands" with one of these beings so human in their behaviour. But his patting seems to have been taken up in a way quite their own, for the result was a round of beak-strokes from one individual to another until it came back to the starting-point and the circuit was closed.

A bit farther on they came to an ice barrier 200 feet high. After an hour's hard toil they had reached the top. Before them an endless ice plain stretched in all directions as far as the eye could see. This plain had a striking likeness to the shell of a tortoise with its maze of cracks and fissures. The breadth of these cracks varied from 1 to 3 or 4 feet, and the distance between them might amount to 6 metres. Out of these cracks a greenish uncanny light was emitted.

They now went down the wall again, one of the men, Taizumi, the photographer, returning to the ship, while the two others, Nishikawa and Watanabe, sought for new openings. To the left, roped together, they scaled another ice-wall 150 feet high with a gradient of about 70° . They came across some heaps of ice pebbles, round-shaped and of 5 inches diameter, which resembled fish-scales and, when trodden, gave a peculiar sound like "karang-karang." After two hours the top was finally reached.

Before them the climbers now had the Alexandra Range. The sun shone agreeably. In a sweat the two men pushed on, but at midnight of January 23 a blizzard suddenly fell on them and they had to dig themselves into the snow, indulging in some milk heated over a lamp made of some old cotton soaked in spirits. After an hour or so the blizzard had blown itself out and they could proceed. On January 24, at 6 a.m., they were 10 miles from their starting-point and had barely reached the foot of the mountain which rose above them in a steep precipice. Fourteen hours had elapsed since starting. Here they took a rest, which however was disturbed by an avalanche, from which they had a narrow escape. They now made for the black rock serving as a landmark standing high overhead, and they plodded on upwards. After a while however their progress was stopped by a crevasse $3\frac{1}{2}$ metres broad which they could not cross. They could see no end of this crevasse, from which a green light was emitted. It was hard to stand the disappointment, but there was nothing for it but to turn back.

On this spot they erected a memorial board bearing the following legend: *Dai Nippon Nan-kyoku tanken-tai engan-tai joriku kinen-hyo*, which in English would read literally as follows: "Dai-Nippon South Polar Expedition Coast Landing Party Monument." Besides which it gave the names of the members of the expedition and the date, 24 January 1912.

They did not go back directly. One of the two, Nishikawa, went on to the right until he reached the ridge of the mountain on a level with the lowest of the three mountains. No human being had ever seen the back of this mountain range before. To the south-south-west the central mountain showed. The distance to the edge of its foot was estimated at 6 miles. There was an unbroken ice plateau without any undulation, looking just like the Lapis-Lazuli World as depicted in the Buddhistic Scriptures. Not a dust-mote was to be seen.

After having for some time enjoyed this glorious view, Nishikawa turned back. On his way he was so unfortunate as to attempt to cross a snow-bridge over a crevasse and fell through. Happily the breadth of this crevasse was only 2 feet, and his fall was stopped, his coat being caught by some projection. But

¹ Two months earlier, the Eastern Sledge Party of the Amundsen Expedition (Pres-tud, Hj. Johansen, and Stubberud) had been just behind the Alexandra Mountains which, in their view however, "could not be called an imposing range."—I. H.



All the members of the Second Expedition photographed on New Year's Day 1912; Captain Nomura central figure standing, Lieut. Shirase to his left beside the bearded Ainu: both bare-headed

he could get no purchase either with his hands or feet. Happily however his comrade, who was not far away, heard his shrieks and came in time to rescue him. Having walked another mile they came to the highest point of the ice-plateau. From this point they observed a new mountain range branching off in a south-south-easterly direction some 12 miles long. Height estimated at 1000 feet or thereabouts.

On January 24, at 10.30 p.m., Nishikawa and Watanabe came in sight, dragging along dog-tired after twenty hours' scrambling amongst these Alps. Distance covered about 15 miles. Alarmed at the long absence of this party a second party had in the meanwhile been started off in search of them.

This land of Edward VII was discovered by Scott in 1902; he could not land then because of ice and heavy sea. The Japanese shore party were the first to give a special description of it. These regions are very rich in polar phenomena, and the collection of specimens brought home made quite a polar museum.

According to angular measurements from the anchorage the highest peak of the Alexandra Mountains proved to be 1600 feet above sea-level. The depth of the Bay is about 140 fathoms. The sea bottom is fine ashy loam.

The *Kainan Maru* left her anchorage going eastwards along the coast of the Antarctic Continent. Taking stock of their stores, they found that the bunkers had been reduced from 55 tons to 16 tons and provisions and water had sunk to 15 tons.

In lat. $76^{\circ} 6' S.$ and long. $151^{\circ} 20' W.$ Captain Nomura turned the ship's head round towards the Bay of Whales. Compared to the $152^{\circ} W.$ attained by Scott the preceding year it will be seen that he reached a point $40'$ more easterly.

This run was much hampered by icebergs and drift-ice. Many of these bergs were studded with black specks and, unconscious of the risks run, Tsuchiya and two sailors lowered a boat to go exploring. They made fast to the berg, ten stones serving for anchor, and ascertained that the black stuff was mud and loam. They had barely finished their investigation and were on the way back to their ship, when a fearful thunder was heard, and a colossal iceberg came rushing up from the bottom, throwing around a shower of ice-blocks of all sizes which, scattering round within a large circle, made as many fountains of fantastic dimensions. This iceberg had probably been attached to the sea-bottom and had got loosened. Those on board the *Kainan Maru* who had witnessed this horrible spectacle were pretty sure that the worst had happened to the boat's crew. Their joy can be imagined at their return safe and sound. It was indeed a close shave.

On her way the ship put into a small bay of the Barrier in lat. $77^{\circ} 50' S.$ and long. $158^{\circ} 40' W.$ This bay was named "Okuma Bay" in honour of Count Okuma, the principal promoter and supporter of the expedition. Okuma Bay was 3 miles in length east to west, and had a breadth north to south of 2 miles. Depth 130 fathoms. The water was of a light brown colour, for which the explorers could not account; perhaps it was due to mud from the sea-bottom accompanying ice floating up.

On January 30 they left for the Bay of Whales. On the way they had a new sensation: an iceberg calving off a big block with thundering reports.

On February 1 the ship was off the Bay of Whales, but the wind being contrary she was unable to get in till next day. The aspect of the Bay had much



(旗大連山、長部南學田成、長保瀬白、長生山所見、三ノ左て向、横京日の分五スハ八時)

Mitsui, Shirase, Takeda, and Yamabe in lat. $80^{\circ} 5' S.$ on 28 January 1912

altered since they left, when it was nearly filled up with drift- and glacier-ice.

On February 3 the captain tried to communicate with the shore party, but had to desist, the sea being too heavy. Two men trying to walk across the ice-foot fell into the water and had to retreat. At 1.30 p.m., the weather having in the meantime improved, the ship could finally approach the Barrier, and after much trouble the men of the shore party were got on board, though the stores were still left ashore. The next day, February 4, dirty weather again set in with a strong southerly wind, fog, and snow, and it was a close shave to get the stores on board.

In view of the dangers threatening from the Barrier they dared not stay longer in "harbour," but had to leave in all haste. Thus they were not in a position to pick up the dogs, a score of which were marooned in the uninhabited land.

The *Kainan Maru* now started on her return voyage, and on March 23, at 3.30 a.m., she re-entered the port of Wellington, New Zealand, about five months after her departure. After having taken on board a fresh supply of provisions and coal she left Wellington on April 2, and on June 18 entered the harbour of Hojo, province of Awa. On June 19 the expedition arrived at Yokohama, which it had left on June 20. On the same day, under display of all their bunting, with the Sun-flag and their own Southern Cross ensign a-top, the *Kainan Maru*, the "Opener-up of the South," entered Shinagawa Bay, Tokyo, having run a distance of about 30,000 miles since her departure.

Strange though it may seem, this account of the Shirase Expedition is likely to be the first narrative thereof written in a European language, filling to a certain extent a blank in the history of Antarctica. The reason for the reticence on the part of the Japanese themselves with regard to this expedition is not easy to discover. It is obvious that the expedition of Lieutenant Shirase and his brave companions was a fine undertaking. When the *Kainan Maru* left Tokyo on her way to "open up the South," her sailing was indeed a new departure in more than one sense of the word. As a feat of seamanship, it cannot be denied, it was glorious. We have the words of the officers of the *Fram* that they would not have ventured to cover half the course in such a craft as the *Kainan Maru*. Persecuted by a continuous series of prolonged foul storms, even through the so-called "Pacific" Ocean, this plucky little vessel fought her way farther on through the "Roaring Forties" and the "Foggy Fifties" and the icy and what-not Sixties and Seventies to the very edge of the Antarctic Continent and back again. Such an exploit would seem to warrant that the name of Naokichi Nomura should be remembered among the great navigators.

As an Antarctic venture the Shirase Expedition should be judged, not on the shortage of 10 degrees from its original goal, but in the light of the fact that this was a totally new departure in Japanese exploration based on no previous experience, which in polar regions is perhaps more important than anywhere else; in the light of this fact the Japanese venture of 1911-1912 fully deserves its place, up till now left rather blank, in Antarctic history.



(東南向はる見に方、上轉等二洋西人、一船長大川路はるやに手を指、景光撮影)

The boatswain and second mate of the "Kainan Maru" in the Bay of Whales, 2 February 1912

Reprinted from the *Geographical Journal* of Nov. 1933 by permission of the author and the Royal Geographical Society

ELLSWORTH PARTY GREETED ON RETURN

Explorer Goes Down Bay With
Mayor's Group to Welcome
the Wyatt Earp.

The motor ship Wyatt Earp, base ship of the Lincoln Ellsworth Antarctic Expedition, arrived in New York on April 19 from the Bay of Whales, Little America, after a trip of more than half the distance around the world.

An official delegation appointed by Mayor La Guardia, in cooperation with the Museum of Natural History and the Explorers Club, extended official greetings to the expedition. Mr. Ellsworth, who returned to the city two weeks earlier, rejoined his men and, with the official delegation, accompanied them to Pier 73, at the foot of West Thirty-fifth Street.

The Wyatt Earp, named for a famous Western Sheriff of frontier days, a boyhood hero of Mr. Ellsworth, awaited the welcoming group at Quarantine. The Mayor's committee left Pier A at the Battery at 10:30 A. M. on the steamer Riverside with the Explorers Club flag at the foremast.

At 11 o'clock the Riverside circled the squat former Norwegian herring fisher. The Polar Star, the plane in which the explorers crossed the Antarctic continent, was lashed to the foredeck of the latter. It was the silvery glint of the plane's fuselage that set the craft apart from any busy little freighter or fishing boat.

Harbor Ships Greet Vessel

One of the first aboard as the Riverside made fast was Mr. Ellsworth, who enthusiastically greeted the members of his expedition, whom he had not seen for weeks. He carried with him the Wyatt Earp's American flag, which the Discovery II borrowed last January when she took Mr. Ellsworth and his pilot, Herbert Hollick-Kenyon, to New Zealand. A seaman ran it up the foremast in place of the tiny one flying there.

When the official group was aboard, the Wyatt Earp started her trip up the harbor, acknowledging blast for blast the whistle salutes of larger and more impressive looking ships. As the vessel neared the Battery, sparsely lined with spectators, the formal welcoming took place. This was broadcast over the Columbia system.

Mr. Ellsworth paid tribute to the qualities of the boat that brought the expedition back.

"There is something that makes you feel happily home," he said, "when you put foot aboard a ship that you have learned to love and depend upon, and the Wyatt Earp has been a dependable little craft."

Mr. Ellsworth recalled the failure of his radios—he had three with him on the flight.

"I have been asked many times why we did not use the radio left at Admiral Byrd's old base," he said, "It may be well to explain we were never able to locate any equipment connected with radio beyond reminiscent towers and dangling wires."

Besides Mr. Ellsworth and Mr. Hollick-Kenyon, the members of the expedition who returned were: Sir Hubert Wilkins, J. H. Lyburner, pilot; Dr. Theodore Schlossbach, expedition physician; William Kranke Jr. and Patrick Howard,



Times Wide World Photo.

Some of the reception committee with the explorers. Left to right are Walter Granger, president of the Explorers Club; Mrs. Lincoln Ellsworth, Vilhjalmur Stefansson, Frank A. Tichenor, chairman of the reception committee representing the Mayor; Lincoln Ellsworth, Herbert Hollick-Kenyon, Mrs. Hollick-Kenyon and Joseph Robinson, secretary of the Explorers Club.

Ellsworth Says Watch He Borrowed Is Safe

SCHENECTADY, N. Y., March 2.—From Sydney, Ausetrailia, Lincoln Ellsworth has radioed to a worried friend news that that a watch he borrowed before he departed for the Antarctic is safe. Mr. Ellsworth is returning from Little America.

The watch was one Ellsworth had carried in a flight over the North Pole and later presented to Dr. John H. Finley, associate editor of THE NEW YORK TIMES. When Ellsworth left for the Antarctic, he borrowed the watch because of its accuracy.

In a radio conversation today Clyde D. Wagoner, of the General Electric Company, asked if the watch was safe.

"Tell him [Dr. Finley] I'll give it back when I reach New York April 10," Ellsworth replied.

aviation mechanics, and Walter J. Lanz, radio operator. Sir Hubert left the ship at Quarantine Saturday night.

The ship is commanded by Captain Hartwig Olsen, a sturdy Norwegian who was first mate of two previous voyages. His son Magnus is his second officer. Captain Olsen is a veteran of the Antarctic, having made six trips there, serving as a whaler before he joined the Wyatt Earp.

SMITHSONIAN GETS ELLSWORTH PLANE

Explorer Gives Craft in Which
He Made Antarctic Flight
to Washington Museum.

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Lincoln Ellsworth announced yesterday that he has presented to the Smithsonian Institution his plane, the Polar Star, which carried him and Herbert Hollick-Kenyon across 2,200 miles of Antarctica and enabled him to claim 350,000 square miles of land for the United States.

"I am very happy to learn," he said, "that it will be placed on permanent exhibition there." He is reserving the right to borrow the plane in the event he needs it for further exploration.

The Polar Star, a Northrop low-winged monoplane, has suffered both disaster and triumph in its three attempts to span the last unexplored stretch of land in the antarctic. During the first attempt pack ice broke under it and ground it into the sea. It was carried back to Los Angeles for repairs. On the second attempt a connecting rod broke and it had to be shipped to Dunedin, New Zealand, to have it replaced. On the third try it behaved perfectly, weathering blizzards and snow squalls during the long, perilous flight. Actual flying time was nineteen hours, but thirteen days and two hours separated the time of the take-off and the

time it ran out of gasoline and had to be abandoned fifteen miles short of its destination, the Bay of Whales. April 24

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THE POLAR TIMES highly recommends "The Polar Record," published January and July by the Scott Polar Research Institute, Cambridge, England.

The American Polar Society was founded Nov. 29, 1934, to band together all persons interested in polar exploration. Membership dues are one dollar a year, which entitles members to receive THE POLAR TIMES twice a year.

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ANTARCTIC LURES ELLSWORTH AGAIN

Explorer, Back in City, Wants
to Fly Over Southern Polar
Regions Once More.

Lincoln Ellsworth returned to New York on April 5 from his flight across Antarctica with no plan for a new exploration venture, but with a strong desire to return to the southern polar region and fly over the unseen reaches of Enderby Land, south of Africa.

While he intimated that he did not see how he could finance such a venture, which, he said, would require two ships and two planes, he made it apparent that his longing for the isolation of the polar regions and his dislike of civilization might force him back.

He talked of his 2,100 mile flight at the Explorers Club, 10 West Seventy-second Street, where he was given a reception in the afternoon after arriving from Chicago at 9 o'clock. He was met at the train by a delegation from the Explorers Club headed by Dr. Walter Granger, president. He was accompanied by Mrs. Ellsworth.

The recollection that amused him most about his adventure was of meeting the eight men who came from the Australian rescue ship Discovery II. Herbert Hollick-Kenyon, his pilot, had walked to the ship the day before, Jan. 15, when the plane from the ship had flown over their shack at Little America, and having failed to return, as he promised to do. Ellsworth had set out to walk the eight miles. He had not gone with Hollick-Kenyon because of a frozen foot that had become infected.

"I got out of bed and walked about a mile when I met the eight men from the ship," he recounted. "They looked like an army in the fog. Their first remark was, 'Have you any food?' They said they had walked eight miles and were not used to it. We went back to the shack and they cleaned up everything left."

While grateful for the coming of the Discovery, Mr. Ellsworth said he was sorry that his own supply ship, the Wyatt Earp, had not been able to arrive first, because the vessel and men aboard, headed by Sir Hubert Wilkins, had shared in the difficult preparations for the flight.

Mr. Ellsworth said his flight, with four landings, had convinced him that the charting of Antarctica was now feasible with the aid of airplanes. The planes could take dog teams and supplies onto the plateau to establish bases for exploratory surveys. But charting of the region would take 100 years, he believed.

Sees Mining Possibilities

He said the flight from the Weddell Sea to the Ross Sea had not convinced him there is no channel dividing the continent of Antarctica, but that there seemed to be none. Asked whether he thought minerals in the region could ever be mined, he said they had found the climate livable at all times. He suggested that man usually found a way of doing what he wanted to do, and probably could find a way to get ores out of the Antarctic if it became necessary.

ELLSWORTH'S POLAR SHIP ARRIVES IN NEW YORK



Times Wide World Photo.

The Wyatt Earp at Quarantine with the airplane in which Lincoln Ellsworth and Herbert Hollick-Kenyon flew across Antarctica on the deck.

ANTARCTIC MINING DECLARED FEASIBLE

Hollick-Kenyon, Who Piloted
Ellsworth's Plane, Tells of
Search for Minerals.

BALBOA, C. Z., March 30.—The Wyatt Earp, the Ellsworth Antarctic expedition's ship, with Sir Hubert Wilkins in command, arrived at Balboa today from Valparaiso and went through the Canal this afternoon.

Herbert Hollick-Kenyon, who was Lincoln Ellsworth's pilot in the transarctic flight, was aboard the ship. He said he planned to return to Winnipeg to resume his job with Canadian Airways, flying from Winnipeg to the North Country mining areas, which, he said, was "more interesting than flying over Polar wastes."

He declared he had found nothing particularly difficult about flying in Antarctic temperatures, as he and Mr. Ellsworth had been protected by warm clothing. He said they had virtually accomplished the objective of their flight from Weddell Bay to Little America, as their fuel had given out only twenty-five miles from Little America. The five-day sledge trip to the Byrd base by a roundabout course was easy going, he added.

The object of the expedition, he went on, was to reconnoitre the area, which is believed to contain oil and coal and other minerals. The flier said it would be entirely practicable to work the mineral areas commercially by sending supplies during the warmer periods and maintaining freight communications seasonally.

MONUMENT IN ICE

(For Lincoln Ellsworth)

Here grow no grasses! Here alone the blast
Wrestling the ice and whistling in the snows!
Here is a wilderness that nature cast
Beyond the boundaries that mankind knows.
Here grow no grasses! Here is but the breath
Of years that stalk their majesty alone!
Where man must face the sweeping scythes of death.
To tingle to the touch of the unknown.
Here on a day of glory all the vast
Rustled with whispers breathless in descent.
A footfall struck, and echoing, it passed
Beyond the skies bent low in wonderment.
Mountains that towered the loneliness of years
Shook the horizons with their agitation;
Snows that had slumbered came alive with fears
Stranger within this land of desolation.
And then he came—with thunder in his tread
And eyes of flame! And South and East and West
Gathered their shrinking distances and fled.
Leaving the North tumultuous in his breast!
And mystery unveiled before his gaze,
And fastness inaccessible from birth
Yielded that glimpse which Providence displays
Only to those anointed of this earth.
Here grow no grasses! Here no need of green.
Nor flower, nor fruit, nor monumental stone!
Enough that this antiquity of scene
Breasts its eternity no more alone!
Enough that these horizons may embrace —
Enough this wind may echo as it blows —
The gleam transcendent on a hero's face —
The step of him, full brother to these snows!

—B. A. HEIMBINDER

ELLSWORTH GETS EXPLORER MEDAL

David Livingstone Centenary
Award Is Given to Him by
Geographical Society.

Lincoln Ellsworth, the explorer, who has just returned from his flight across the Antarctic Continent, received April 21 at a meeting of the American Geographical Society, the David Livingstone Centenary Medal.

The presentation was made by Roland L. Redmond, president, at a meeting of the society at the Engineering Societies Building, 29 West Thirty-ninth Street. After the presentation, Mr. Ellsworth delivered an address dealing with his flight, illustrated by still and motion pictures.

"Lincoln Ellsworth is a modern explorer in every sense of the word," Mr. Redmond said in his presentation address. "It was he who introduced the use of both airplanes and airships in polar exploration."

Mr. Redmond then recalled something of the history of Ellsworth's adventure with Raoul Amundsen in 1925, when they attempted to reach the North Pole by plane and their flight in the Italian airship Norge the following year, when they flew from Spitzbergen across the top of the world to a landing in Alaska. He then spoke of the recent expedition, saying:

"No epic of the past surpasses the high purpose, the deliberate and careful planning, the high courage and magnificent achievement of his last exploration in the Antarctic. Launched on a long and hazardous flight across unknown and uninhabited lands—lands on which neither human nor animal life can survive because of the rigors of the climate—cut off from communication with the rest of the world because of his radio failure, he and his intrepid pilot landed again and again in a wilderness of ice-covered mountains where the least accident meant disaster.

"There they calmly made their observations, waited for favorable weather and then took off again for their distant objective, navigating the while with such accuracy that when their fuel was exhausted they were within twenty miles of their goal. Such an achievement must rank high in the annals of exploration."

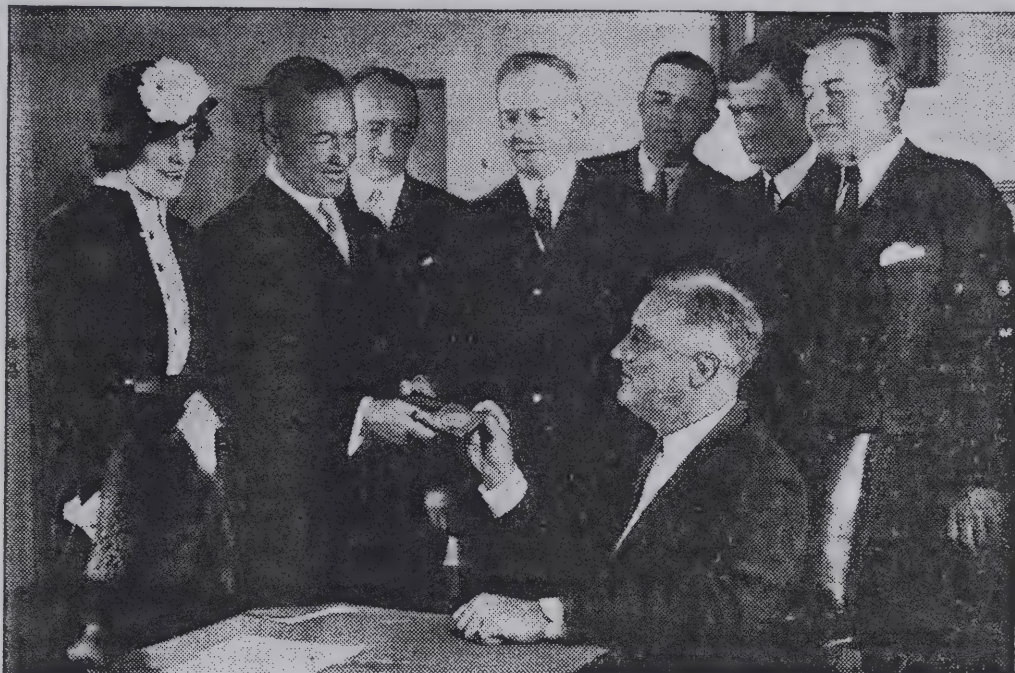
Dr. John H. Finley, honorary president of the society, spoke briefly at the close of the explorer's address and likened the story of the flight to Ulysses's recital of his journey after his return from the siege of Troy.

Ellsworth Gets Club Medal

For his recent flight across Antarctica, Lincoln Ellsworth, Arctic and Antarctic explorer, received the medal of the Explorers Club at a dinner on May 12 at the Hotel Waldorf-Astoria.

More than 400 explorers from many nations and their guests applauded numerous speakers who praised Lincoln Ellsworth.

LINCOLN ELLSWORTH HONORED BY PRESIDENT ROOSEVELT



Lincoln Ellsworth, famous explorer of the Antarctic and other regions, is awarded the Hubbard gold medal, highest award of the National Geographic Society, by President Roosevelt. Left to right behind the President are Mrs. Ellsworth, Ellsworth, Vernon S. Prentice, brother-in-law of the explorer; President Gilbert Grosvenor, of the Geographic Society; Franklin Fisher, Melville Grosvenor and John Oliver La Gorce, official of the society.

Dr. Walter Granger, president of the club, introduced the toastmaster, Lowell Thomas, who read several messages of congratulation to Mr. Ellsworth, one of them from Umberto Nobile, and another from Dr. Hugo Eckener and Captain Ernst Lehmann aboard the Zepplin Hindenburg, over the Atlantic.

Vilhjalmur Stefansson, Arctic explorer, and Dr. Raymond Priestley, vice chancellor of the University of Melbourne, and a member of the Shackleton and Scott parties to Antarctica, described previous polar exploration and praised and evaluated Mr. Ellsworth's 2,340-mile flight from the Weddell to the Ross Sea across the Antarctic Continent. Sir Gerald Campbell, Consul General in New York, brought the greetings and congratulations of Great Britain.

Dr. Isaiah Bowman, president of Johns Hopkins University, introducing Mr. Hoover, described the medal, which was inscribed with Mr. Ellsworth's name, and the notation—"Courageous explorer upon Arctic and Antarctic horizons."

Mr. Ellsworth was the twelfth person to receive the medal.

MAWSON HAILS ELLSWORTH

Australian Praises Flight as He
Reaches Melbourne for Welcoming

MELBOURNE, Australia, Feb. 12.—Sir Douglas Mawson has come here to greet Lincoln Ellsworth, when the Discovery reaches here with him Monday. They have corresponded, but so far have not met.

"I have great admiration for Mr. Ellsworth," said the noted Australian explorer, "and am anxious to hear the story of his flight."

"It was no stunt. He saw and mapped mountains which alone make his flight memorable. His information will be valuable."

ELLSWORTH GETS HUBBARD MEDAL

President Presents Trophy to
Antarctic Explorer in White
House Ceremony.

WASHINGTON, April 15.—Government officials, diplomats and high officers of the army and navy tonight heard Lincoln Ellsworth lecture on his recent Antarctic trip before the National Geographic Society in Constitution Hall.

Previously President Roosevelt had bestowed on the explorer the Hubbard Medal of the National Geographic Society, awarded only twelve times before. The presentation took place at the White House.

Mr. Ellsworth told his audience, as he had informed the President earlier, that "the most important incident of my trip across Antarctica was the raising of the Stars and Stripes in that territory of 350,000 square miles of vast, untamed land, the last unclaimed territory on earth."

Antarctica could be charted and explored, in his opinion, by the use of airplanes to carry supplies and sled dogs to inland bases. About 75 per cent of Antarctica was still unexplored. Much of the interior over which he flew was a smooth, level plateau, ideal for landing and taking off.

For the two months that Mr. Ellsworth and his companion Hollick-Kenyon were out of touch with the rest of the world, they were at no time actually lost. They knew their exact position in terms of latitude and longitude at all times. The explorer expressed his thanks

to Rear Admiral Richard E. Byrd for the supplies left behind at Little America, and to the directors and crew of the British scientific exploration ship, Discovery II, although the aid extended by the latter was not a rescue, since the two men were merely waiting for their own ship, the Wyatt Earp, to call for them at Little America.

Mr. Ellsworth was presented to the Society by Dr. Gilbert Grosvenor, its president who described him as "a world discoverer who exemplifies the finest traditions of science, modesty, resource, and valor."

The Hubbard medal was inscribed "Awarded by the National Geographic Society to Lincoln Ellsworth for his heroic and extraordinary achievements in Arctic and Antarctic exploration 1925-1936."

Attending the presentation were Mrs. Ellsworth, Dr. Grosvenor and John Oliver LaGorce, vice president of the society.

In his brief speech the President said:

"Lincoln Ellsworth, it is always pleasant to have a part in the recognition of achievement, and this occasion is one of greater pleasure to me because it is a reminder that the world still holds high adventure for those who have the spirit to seek it. There was a real romance in that Arctic and Antarctic flight of yours which carried you over a trackless area upon which human eyes never before had gazed, and I am particularly happy to welcome back home an old friend.

"And now that venture in discovery, as well as your flights over the Arctic, both of which enlarged the sum of human knowledge, are to be rewarded by the National Geographic Society. It gives me special pleasure in behalf of that organization, which was founded for 'the increase and diffusion of geographic knowledge,' to hand to you the Hubbard Medal."

ANTARCTICA LEADS AS WHALING FIELD

Byrd, Ellsworth Pictures Show More and Better Food Drew Mammals to the Scene.

Photographs brought from Antarctica by Admiral Byrd and Lincoln Ellsworth tell why the region "down under" has largely succeeded the Arctic as the world's leading whaling ground. Huge schools of the mammals cavort about Antarctic bays.

Near the beginning of this century, after the number of whales in northern waters had been seriously reduced by unrestricted killing, fishermen began to realize that "thar she blows" was a more familiar cry among the icebergs of the southern seas than anywhere else in the world, says a bulletin from the National Geographic Society. Investigations soon showed them that the whales' reason for choosing those waters was the same as a man's reason for choosing his restaurants—"They serve better food there, and more of it."

Although the killer whale is provided with about two dozen pairs of dangerous teeth on his lower jaw, whalebone whales have no teeth at all. Instead, they have long, thin, bone-like strips, called baleen, set close together in the upper jaw and hanging down across their mouths, each strip frayed out on the inner edge into a fuzzy net-like mass of fibers. "How," fishermen had often wondered, "can they bite or chew?" The answer is that they can't; therefore, they must pass up the juicy squids and cuttlefish on the whale menu for their toothy relatives and satisfy their appetites by swallowing whole the minute defenseless creatures of plankton. And since their favorite plankton is to be found near the floating ice masses of the Antarctic, whalebone whales swim down there for a mile or two of dinner.

Strange Colors in the Sea

Plankton is a floating collection of tiny plants and animals and infants of some larger sea creatures, drifting with currents near the surface of the water. The microscopic inhabitants of the plankton community are so small that for a long time they were recognized only as a strange color tinging the sea—"a band of orange-colored water extending for many miles," "two patches of reddish-colored water." Their presence gave the Red Sea its name.

Other forms of plankton make the surface of the ocean shine with phosphorescence at night. These luminous creatures mysteriously produce what the world's wisest scientists cannot copy, "cold light," the perfectly efficient light that loses no part of its energy in heat. When finally recognized as living and not lifeless dust, the sea's drifting menagerie was named plankton, or floating life.

Under a microscope the tiny animals and plants looked like fairy jewels of fantastic shape—snowflakes with glittering shells of glass, globules round as pearls but with the brilliance of diamonds, miniature crabs and shrimps al-

most transparent with only the faintest pink tint, small shining lozenges like cough-drops with feathery fins, sea butterflies with filmy wings.

Many fish depend upon plankton for food, and fishermen have noticed that a season of superior fish can be attributed to a big plankton crop. Scarcity of plankton has prevented small fish fry from living to maturity. There are rare instances of plankton causing chemical conditions in the water from which whole areas of oysters and fish have been poisoned. Ordinarily, however, the little units of plankton are as useful as they are numerous, and their true number is so high that it can only be guessed.

Millions of Tiny Skeletons

One square mile of salt water has been known to yield sixteen tons of minute skeletons, but of the millions without skeletons there is little chance of an accurate estimate. One little skeleton might be as small as the period of a sentence, but there would be still an animal small enough to creep inside that empty shell and have plenty of room in his second-hand home. Drifting to the sea floor and decomposing, these skeletons furnish a fresh supply of life-giving chemicals for the other inhabitants of the ocean.

Plankton cannot swim, but must float with the ocean currents. To prevent sinking to cold dark depths, where it could not live without light, it is equipped with many different kinds of water wings. Naturally it is thickest around coasts and where ocean currents meet.

It is estimated that a large whale must consume cartloads of krill—shrimplike creatures found in plankton—for one square meal, and the stomach of a whale taken where plankton is plentiful may be stretched by its contents nearly to the bursting point.

The mysterious whale-routes across the open sea may be marked out by currents bearing stray communities of krill. It has been suggested that boundaries of an Antarctic continent of long ago, now beneath the sea, may be "remembered" among schools of whales as the location of krill, and the unexplained whale-paths may trace coasts that have disappeared centuries ago.

PLANKTON'S MOVES TRACED

Scientists Find 'Fish-Food' Goes 'Round and 'Round in Ocean.

Important questions relating to the supply of "fish-food" all over the world have been raised, according to The Morning Post of London, by recent finds made by the Discovery Committee working under the British Colonial Office. The problem is that of the plankton, the minute and primitive organisms, on which all sea life is ultimately dependent for its food. They can swim, but not against a current. Yet, somehow, each of the different species of plankton manages to retain its allotted place in the world's oceans. If it did not, it would perish.

The secret, it was explained, is that the Antarctic plankton at least have an apparently instinctive knowledge of the movement of deep ocean currents which man is only now beginning to discover. From December to March, during the Southern Summer, the plankton frequent surface waters, and

are therefore carried north and away from their home. Then they dive, to a depth of 3,000 or more feet, until they meet a southbound current to carry them back again. Finally, they return to the surface, only to repeat the same cycle anew.

This has been demonstrated by bringing up numerous samples of water, at various points along their route, from six different depths ranging down to nearly 5,000 feet. At one stage on their journey it is believed that the plankton may have to descend to more than 6,000 feet to keep in the necessary southbound current. Antarctic shrimps, on which the southern whales immediately feed, have been shown to achieve the same result by diving to a similar level to spawn.

"It is impossible at present to say whether such movements are general," a Discovery Committee expert stated. "One can only suggest that there is no reason why the type of depth-cycle discovered should be confined to the Antarctic."

BRITISH SHIP SHOOTS LABELS INTO WHALES

Ocean Mammoths Branded in Effort to Get Data to Halt Their Extinction.

LONDON (P).—A battered little 300-ton vessel, buffeted 30,000 miles through Antarctic storms, now is at rest at St. Katherine's dock here after seven months of chasing whales. But not for keeps.

She is the research ship William Scoresby, returning from her fifth trip to the Far South, where scientists are observing and marking whales to trace their migration. The William Scoresby is little sister to the Discovery, permanently based at the Falkland Islands for Antarctic research. Both vessels represent British scientific efforts to halt extinction of the sea mammoths by whaling factory ships.

G. W. Rayner, scientist on the William Scoresby, explains that the movement of whales is traced by firing into them stainless steel labels which are recovered when the whales are caught. The little ship steamed through and around the pack ice, and marked 700 whales.

"The main object of our work," Mr. Rayner says, "is to try to find out if whales wander all around the Antarctic or return to the same place. We have not yet secured sufficient data, but present indications are that they tend to return periodically to their old haunts. Eventually, by working out the life history of the different kinds of whales, we hope that international rules may be made to prevent the extermination of whales, which is at present a real danger in spite of existing regulations."

The research work, under the auspices of the discovery committee of the British Colonial Office, has been under way for twelve years, and another six or eight years is believed needed to gather all pertinent data. Then, officials hope, an international treaty can be worked out for protection of whales, somewhat similar to the four-power treaty among the United States, Canada, Russia and Japan that protects seals in the North Pacific.

Ellsworth Gets Kane Medal

PHILADELPHIA, May 15.—Lincoln Ellsworth received the Elisha Kent Kane Gold Medal tonight from the Geographical Society of

Philadelphia in recognition of his flight across Antarctica. The society's spokesman was Elisha Kent, nephew of the explorer for whom the medal is named. Mrs. Marie Peary Stafford, daughter of Admiral Peary, and Captain Robert A. Bartlett also spoke.

June Party Gives Plans Of New Antarctic Survey

50 to Explore 2 Years, Using House-Like Tractors

Details of a third Antarctic expedition, patterned after the two led by Rear Admiral Richard E. Byrd but headed this time by Harold I. June, Byrd's chief pilot on his last trip to the bottom of the world, were announced May 27 at the Hotel Lexington, Forty-eighth Street and Lexington Avenue, by C. A. Steward, one of June's associates. The venture was first disclosed by June early this month in a speech at Providence.

Mr. Steward said the undertaking would cost \$1,000,000, nearly half of which already has been pledged by organizations and individuals whom he declined to name; that it would require two years to organize and would spend two years exploring that portion of Antarctica on the opposite side of the South Pole from Little America.

He said this uncharted area of 600,000 square miles, "half the size of Australia," would be explored by three tank-like, Diesel-motored tractors forty feet long and twenty wide, which are now being designed under June's direction. Each will carry a small scouting plane to expedite the survey work, Mr. Steward said.

About fifty men will make up the expedition, Steward said, that will organize for a two-year stay on the ice of Martha Land. One or more big, long-range supply planes will be maintained there to transport geologists and scientists to any "important finds" that may be made by the tractor-scouting plane expeditions and to replenish their fuel and other supplies on occasion. The tractor crews will live in their house-like machines. Steward said, provision being made to heat these with the exhaust from their oil-burning engines.

WHALING CURB IS DENIED.

Australian Minister Says Japanese Are Not Being Barred.

WIRELESS TO THE NEW YORK TIMES.

CANBERRA, Australia, Thursday, March 5.—Sir George F. Pearce, Minister for External Affairs, denied today Tokyo newspaper reports that Australia was interfering with Japanese whaling companies in Antarctica under British pressure by declaring whaling waters in Australian territory territorial waters.

He explained that several years ago international action was proposed at Geneva to prevent indiscriminate slaughter which threatened to extinguish the whaling industry and twenty-four nations agreed to the covenant, but Japan did not accept.

The area known as the Australian sector is still under British jurisdiction, but the Whaling Act regulating the industry in these waters has not been proclaimed. Supplementary State legislation is necessary before Australia as a party to the Geneva convention would regulate whaling in territorial waters.

Whaler Reached 72 S. Latitude

According to records in Sydney, an Australian whaling vessel, the Venus, ventured beyond 72 degrees south latitude in the South Polar region of the Ross Sea nine years before Explorer James Ross made his famous voyage between 1840 and 1850.

BYRD'S LIFE WORK TO BE WORLD AMITY

Admiral Announces He Will
Labor for Understanding
Among Nations.

2 YEARS FOR EXPLORATION

Rear Admiral Richard E. Byrd will consecrate the rest of his days, with the exception of two years he set aside for further exploration, in work for international amity and in fostering the ideal of building "a fairer and better life for human beings," he revealed last night at a testimonial dinner at the Hotel Waldorf-Astoria given in his honor by representatives of American industrial, professional, scientific, educational and cultural groups.

In doing so, Admiral Byrd revealed, he will carry out a promise he made himself as he lay "on the edge of life" within the shadow of the South Pole on his six-month lonely vigil at Advance Base, the world's southernmost outpost. During that vigil, when he was hovering between life and death as the result of poisonous fumes from a faulty oil stove, a "combination of unforeseen circumstances brought about the crystallization of plans which had for long been in my mind."

On behalf of the 600 representatives of the five groups present, Colonel Henry Breckinridge presented to Admiral Byrd a gold medallion inscribed to "Dick Byrd, Gallant Gentleman," and depicting on its face the Admiral seated at the radio in his hut at Advance Base and on the reverse side is the following inscription:

DICK BYRD, GALLANT
GENTLEMAN

Due to a combination of unforeseen circumstances, it became his duty as he saw it to keep alone a six-month vigil for meteorological observation at the world's southernmost outpost. Before the middle of the long Antarctic night he was stricken desperately ill from the poisonous fumes of a faulty oil stove. Survival seemed impossible. He deliberately chose to die rather than "tap out an S O S on his radio. In fact, he further squandered his strength and lessened his chance for survival by painfully hand-cranking his radio to keep his schedule and report "All's well" to Little America. Lest his silence cause his comrades to risk their lives coming to his rescue in the darkness. For months of the bitterest average cold ever endured he hung precariously on the edge of the abyss. Untold suffering did not compel him to alter his decision. By a miracle he was spared.

The tribute to Admiral Byrd comes just after the close of one of the most remarkable lecture tours ever undertaken in this country. After returning from Little America on May 10, 1935, when he

TESTIMONIAL TO BYRD



was received by President Roosevelt at the Washington Navy Yard, Admiral Byrd started his tour on Oct. 1 and completed it on May 10, 1936, the anniversary of his homecoming.

In that period of a little more than seven months he lectured in 156 cities, addressed audiences totaling more than 600,000 persons, and traveled more than 20,000 miles—as far as from New York to Little America and back. His largest audience was in Minneapolis, where he spoke to 20,000 persons in a single gathering.

Thomas J. Watson, president of the International Business Machines Corporation, who presided, read a letter he had received from President Roosevelt, who said:

"My dear Tom:

"When you and other friends and admirers of 'Dick' Byrd gather for the testimonial dinner next Friday evening, please extend to him, as your guest of honor, my hearty felicitations. I have much pleasure in associating myself with those who are planning this testimonial to an old friend and great explorer—one who has been tireless in his quest of new horizons."

Members of Byrd Party To Get Silver U. S. Medals

WASHINGTON, June 3 (AP)—Presentation of silver medals to members of the second Byrd antarctic expedition is authorized by a bill signed yesterday by President Roosevelt.

WASHINGTON, March 3. — A resolution directing the presentation of silver medals to Rear Admiral Richard E. Byrd and the members of his second Antarctic Expedition was recommended to the Senate today by its Banking and Currency Committee. The measure was originally introduced by Senator Glass.

The proposal would direct the Secretary of the Navy "to cause to be made at the United States Mint such number of silver medals as he may deem appropriate and necessary, respectively, to be presented to the deserving personnel of the Second Byrd Antarctic Expedition that spent the Winter nights at Little America or who commanded either one of the expedition ships throughout the expedition to express the high esteem in which the Congress and the American people hold their heroic and unadorned accomplishments for science, unequalled in the history of polar exploration."

ANTARCTIC CLAIMS BY U. S. ARE URGED

Professor Hyde, Doubting the
Sufficiency of Dropping Flags,
Asks Congress Action.

Claims of sovereignty over lands discovered by modern explorers, specifically in cases where flags were dropped in Antarctica by Lincoln Ellsworth, are discussed in an article by Charles Henry Hyde, Professor of International Law at Columbia University.

Professor Hyde began by pointing out the manner in which so flimsy a claim stake as a flag might easily disappear in the Antarctic before any settlements could make sovereignty permanent. He also pointed out that present international law on discoveries in the temperate zones requires settlements before the lands come under the rule and possession of the settlers' native land. Recent decisions on the subject were cited by him as follows:

"It should be noted also that France has made claim to a small area known as Adélie Land (in what may be geographically referred to as the Australian Quadrant) and has placed it under the

Governor General of Madagascar. "The United States has pursued a different course, and has not been disposed to accept the sector system. No act of Congress has proclaimed the sovereignty of the United States over any polar tracts. "Some twelve years ago the government appeared to conclude that even in polar regions a discovery coupled with a taking of possession would fail to support a valid claim of sovereignty unless followed by actual settlement. Nevertheless, it has since been made alive to the fact, especially in view of the conduct of other powers as claimants in both Arctic and Antarctic regions, that the acts of Admiral Byrd and other explorers may be regarded, according to tests that may be widely accepted, as sufficient to give to the United States a good title to areas that have been claimed in its behalf.

"Therefore the government has endeavored to safeguard the nation against their loss while Congress remains inert. It has been made known to other powers that the United States reserves any rights that may have accrued to it from the conduct of certain American explorers. In this way it has sought to forestall the contention that there has been abandonment of something that should have been preserved. Apart from the efficacy of its procedure, it ought to be clear that if the United States desires to keep or take advantage of what men like Byrd, and more recently Ellsworth, have valiantly sought to win for it, the Congress should lose no time in proclaiming the fact and in declaring to the world that there is a region in the Antarctic which belongs to Uncle Sam."

Antarctic Bacteria Now Being Studied

Microbes from Little America. Commander Richard E. Byrd's Antarctic village, are under observation at Allegheny College, at Meadville, Pa., and significant conclusions probably will be prepared in a short while, according to Dr. Chester A. Darling, Allegheny bacteriologist and honorary bacteriologist of the Byrd expeditions.

The specimens were procured by Paul Siple, member of both expeditions, and chief biologist of the second, and have been kept in the Allegheny College laboratories since his return. Siple collected snow samples in different parts of the Antarctic along with soil mosses and debris of other sorts, some of which has been kept growing in the laboratories.

NO WARMTH IN ROSS SEA

Discovery II Reports It Found
Only Cold Water in Area.

CAPETOWN, South Africa, May 11.—The royal research ship Discovery II arrived here today from the Antarctic.

Although her program of research was interrupted by the rescue of Lincoln Ellsworth, she made important oceanographic observations in the Ross Sea during her dash to Little America, the most important being that the Ross Sea has no intermediate layer of warm water between the cold surface and the cold sea bed.

The Discovery II is sailing again next week for the Antarctic, but will return in a few weeks to refit at Simonstown.

TWO IN BYRD PARTY TO GET FLYING CROSS

Bowlin and Pelter to Be Presented Honor at Direction

March 3 of Roosevelt.

For "extraordinary achievement while serving with the Byrd Antarctic Expedition, 2d," Rear Admiral Adolphus Andrews, acting Secretary of the Navy, yesterday announced the award of a Distinguished Flying Cross to William Milton Bowlin, aviation chief machinist's mate, and Joseph Arnold Pelter, photographer, first class, U. S. N.

In announcing this today, Admiral Andrews said presentation of the award is by direction of President Roosevelt.

Bowlin, whose home is at Indianapolis, participated in a hazardous flight over 900 miles of crevassed areas, where travel by foot would have been impossible to the eastward of Little America.

Pelter participated in a hazardous flight of 1,110 miles to the south-east of Little America as aerial surveyor on November 22, 1934. Pelter's home is in San Diego, Calif.

Soviet Fliers Survey Polar Route

MOSCOW, April 28 (AP).—Three Soviet fliers flew today for seven hours over Franz Josef Land and the Arctic Ocean directly north of the islands, studying ice and wind currents. This survey is the first step in what it is hoped will be a transpolar air route to the United States. The airmen were constantly in radio contact with their base at Tikhaya Bay.

ELLSWORTH FEAT GETS RECOGNITION

Medal Voted by Congress Rewards Claim to Vast Polar Area for Nation.

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WASHINGTON—Among the flood of bills passed in the final week of Congress was one awarding a medal to Lincoln Ellsworth for his work in the Antarctic. The bill includes the first official recognition of the vast area claimed there for the United States.

The law authorizes the President "to present a gold medal of appropriate design, with accompanying distinctive ribbon, to Lincoln Ellsworth, noted American explorer and outstanding pioneer in exploratory aviation in the Arctic and in Antarctica, for claiming on behalf of the United States approximately 350,000 square miles of land in Antarctica between the 80th and 120th meridians west of Greenwich, representing the last unclaimed territory in the world, and for his exceptionally meritorious services to science and aeronautics in making a 2,500-mile aerial survey of the heart of Antarctica, thus paving the way for more detailed studies of geological, meteorological and geographical questions of world-wide importance and benefit."

Three-quarters of the continent of Antarctica, which is slightly larger than the United States, already is claimed by Great Britain and France. The United States, through the explorations of Rear Admiral Richard E. Byrd and Lincoln Ellsworth, has established a basis for a claim to about one-quarter. Recently Norway, whose explorers and scientists have done extensive work there during the last twenty years, has intimated that it will claim a portion of the vast area.

According to precedents of international law, a claim to be valid must be filed within a period of five years after discovery. The procedure is for the claimant nation to send a circular letter to all the governments of the world describing the area in question and announcing its acquisition.

The United States thus has three years in which to file a claim for the territory discovered by Admiral Byrd and four years in which to act upon the work done by Mr. Ellsworth. Admiral Byrd's explorations overlapped British territory to a considerable extent, but the major portion of Mr. Ellsworth's work was in unclaimed land.

How Strong is a Whale?

The largest of the whales, the blue, is probably the strongest of animals now alive and among the strongest and the biggest beasts that ever lived.

Off the coast of Siberia a whaler shot a blue whale. The whale ran out 3,000 feet of cable on the harpoon — and then, though the ship's engines were full speed astern, towed the ship forward for seven hours at eight knots or more an hour. In other words, that blue whale was much stronger than the ship's engines!

Flying Trapper to Kill Wolves in Alaska That Have Slain Thousands of Reindeer

By The Associated Press.

WASHINGTON, May 30.—Plans for an airplane attack on savage packs of Alaskan wolves were worked out today by three Federal agencies.

Explaining that "because of the vast open spaces in Northern Alaska it is difficult to approach packs of wolves unobtrusively and kill them by shooting," officials said that they planned also to ask the help of reindeer herders in trapping them.

The expenses of an experienced trapper will be paid jointly by the Biological Survey and the Reindeer Service. The Office of Indian Affairs is supplying traps and other equipment. The trapper will travel by airplane.

Last Winter, Governor John W. Troy cabled for help to prevent the wolves from preying on reindeer during the fawning season, but officials said that no funds were then available.

As an example of the wolves' ac-

tivities, officials said that more than 100 reindeer on Barter Island were killed despite patrols carrying lanterns.

Emphasizing the seriousness of the situation, Indian Office officials said that many Eskimos were without food, except for that provided by the government.

As a result of the severe Winter, they said, virtually no seals or fish were available, while wolves have killed thousands of the 550,000 reindeer in Northern Alaska.

Trapping will be carried out along the 600-mile coast of the Arctic Sea from Point Barrow to the Canadian border, where few white men have ever been.

Frank Daughtery, the agent at Point Barrow in urging a campaign against wolves, said that several families had eaten sealskin coats and their boots to escape starvation.

At Wainwright, he reported, wolves traveling twenty in a pack killed 238 reindeer on a range near the village.

ESKIMO OF CANADA MAY TURN HERDER

3,000 Reindeer in Mackenzie River Country Expected to Interest Nomadic Tribes.

OTTAWA (Canadian Press).—A walking meat store that took four years to reach its consumers may change the lives of Canada's Eskimo, turning them from hunting to herding, the only form of farming possible in their bleak northern homeland.

The store contains more than 3,000 reindeer, driven by Seattle's Andy Bahr across country from Alaska to the ranges near the mouth of the Mackenzie River, in the Western Canadian Arctic. It arrived early last year and produced 811 young in the first fawning at its new home.

Last Fall the Canadian Government, which owns the herd, ordered 215 steers killed and fed to Eskimo children living at the Shingle Point Anglican School and the Aklavik Roman Catholic School. Native patients of two hospitals got some as well. All liked the meat. The Right Rev. A. L. Fleming, Anglican Bishop of the Arctic, said they commented enthusiastically on its taste.

Critics of the reindeer scheme have contended it would be difficult if not impossible to make the nomadic, hunting Eskimo change his ways and become a traveling farmer, but the government held otherwise.

It recalled the old days when Eskimo frequently abandoned their girl children, causing a shortage of wives in time and resulting in numerous fights and even killings among tribesmen. That condition no longer exists.

Many years ago it was contended that the Eskimo could not be taught

27 Alaskan Musk-Oxen To Pioneer on Far Island

By The Associated Press.

FAIRBANKS, Alaska, June 14.—Twenty-seven contented musk-oxen were singled out from the herd on the University of Alaska farm today to take up pioneer life on a little island in the Bering Sea 2,000 miles away.

The beasts, which combine the characteristics of the sheep and ox and are covered with brown hair reaching almost to the ground, will move July 1 by railroad and Yukon River steamer to Nunivak Island, off Southwestern Alaska.

Charles H. Rouse of the university, in charge of moving them, hopes to build up a large herd to provide food and wool for the 500 Eskimos living there. Five musk-oxen, taken from the university herd a year ago for experimental purposes, flourished on Nunivak, he said.

The foundation of the university herd was brought here in 1930 from Greenland in the hope of restoring the species to Alaska, which had great numbers before ruthless hunting virtually exterminated them.

Accounts of Arctic explorations mention frequently this odd-appearing creature, which once roamed most of the polar regions. Its fossils have been found as far south as Kentucky.

to trap because he was an inveterate hunter. Years of gradual civilization in the Arctic, however, showed the Eskimo the convenience of such things as motorboats, good firearms, radio sets and in some places electric lights. To have those things he needed money and the only way he could earn money was to trap.

Officials are pleased over the reindeer meat experience at Shingle

Point and Aklavik. The regular supply of wild-life food for the Eskimo will not last forever and they believe teaching the Eskimo to be a herder is to a large extent a matter of capturing his interest.

Apprentice herders, young men and boys, are being trained to look after the large herd. Eventually, it is hoped, these young men will be able to take charge of small groups of animals, move them to other parts of the Arctic and establish them as nuclei of other herds that will guarantee a source of food in the future for the Eskimo.

CIVILIZATION'S FOOD AIDS ESKIMO HEALTH

Tests Made in Eastern Arctic Show Natives Thrive on Diet of the White Man.

Several current notions about the relation of civilization to diseases seem to be upset by recent studies of Canadian Eskimos in the Eastern Arctic. The idea, for example, that primitive peoples cannot eat civilized man's foods without having their health damaged is not borne out by observations on these Eskimos, reports Science Service.

The observations were made by Dr. I. M. Rabinowitch of Montreal during the Canadian Government Eastern Arctic patrol last Summer. Dr. Rabinowitch examined Eskimos at various points around the Hudson Straits, Hudson Bay, and Baffin Bay.

At Craig Harbor, the most northerly post in the Eastern Arctic, Dr. Rabinowitch found two families of Eskimos who live most of the year in huts rather than their native tents and who eat "appreciable quantities of white men's food," although, being Eskimos, may like raw meat and eat large quantities of this also. All members of these families were very healthy, Dr. Rabinowitch reports to the current issue of the Canadian Medical Association Journal.

"Contact with civilized man is thus obviously compatible with good health," he states.

Present policy with regard to these Eskimos is to keep them living as far as possible under their native conditions. Dr. Rabinowitch approves of this as a health measure, but points out that it may not be possible to continue it. He sees no reason why the Eskimos cannot change over to white men's customs and diet without suffering ill health if the change is made under scientific direction.

At present he finds the Eskimos generally healthy except for poor teeth and eyes. The bad condition of the teeth is not due to neglect but to the custom of softening leather by chewing twists of it. Eskimos in the northern posts who had in many cases filthy teeth did not suffer so much from pyorrhea and caries as those in the regions to the south where many of them kept their teeth clean. But wherever leather chewing was practiced the teeth, though healthy, were badly worn down.

The Eskimo "disturbs our idea" of the importance of a strenuous life in relation to hardening of the arteries, Dr. Rabinowitch says, observing that there is no sign of this disease at the northern posts where, presumably, the natives must live strenuously in order to live at all.

Diabetes is another disease from which the Eskimos do not seem to suffer.

5 ENGLISHMEN LEAVE ON ARCTIC EXPEDITION

Young Scientists Start From
Montreal for 3-Year Study
Among the Eskimos.

CHURCHILL, Man. (Canadian Press).—The British Canadian Arctic expedition, under the auspices of the Royal Geographical Society, is en route from Chesterfield Inlet, 300 miles north of here, to Southampton Island. The five members of the expedition, which will spend three years in the north, reported that floe ice is breaking up in rivers off Hudson Bay.

Between the northern end of Hudson Bay and the extreme north of Baffin Island the expedition expects to travel at least 3,500 miles by open whale boat and 8,000 to 12,000 miles by dog team.

The leader of the expedition is T. H. Manning. Already he has discovered hitherto unknown stone buildings, erected by former generations of Eskimo, on Southampton Island. It is by the excavation of these and other remains that he hopes to shed new light on the origin of this race.

Another problem which, it is hoped, will be solved is that of the thousands of miles' migration of "snow" and "blue" geese from limited Arctic breeding grounds to an equally limited area round the Mississippi.

One explorer of the unknown west coast of Baffin Land was the German, Bernhard Adolph Hantzsch, who in 1911 lost his life near the river which bears his name. Further north, no party has yet explored for a stretch of 500 miles—the longest uncharted coastline in the northern hemisphere.

Here, during the Summer months, the expedition will meet the unusual combination of mud, ice and mosquitoes.

The average age of the expedition which has the support of the Royal Geographical Society, is only 24 years. The members are: G. W. Rowley, R. J. O. Bray, P. Baird and Dr. R. Keeling. Each man, for three years' entertainment, is allowed 10 lb. weight of books and a share in the communal gramophone.

For Mr. Rowley, the archaeologist, chief interest in the northern journey will be in the remains of Eskimo villages which he hopes to discover on Southampton Island. Mr. Baird will study rock formations and make a survey of the coast around Baffin Land. Mr. Bray is interested in bird life; particularly in the blue goose, which is to be found in the north country.

FAR NORTH CULTIVATED

Area Sown by Soviet Increases by
30 Per Cent.

MOSCOW.—The area sown to various crops in the extreme northern regions of the Soviet Union increased by 30 per cent during the last two years, it was disclosed at a conference of the All-Union Academy of Agricultural Sciences.

In many regions dairy cattle breeding and vegetable cultivation spread to the Arctic coast and similar enterprises were created on the coast of the Okhotsk Sea and in the basin of the Kolyma River.

Insects Frozen for Ages Now Alive, Say Russians

By The Associated Press.

MOSCOW, Jan. 29.—The Soviet Academy of Scientists announced today that insects and a small variety of lobsters born thousands of years ago had been revived and were pursuing a normal existence. They were found buried fifteen to twenty feet under the surface of a region of eternal frost in Siberian peat fields, the statement said.

The region comprises a zone sweeping from the Arctic across Central Siberia to Mongolia. Ground there below the depth of six feet never thaws. The academy estimated that its finds, which were dug out of the solid, frozen earth, were entombed at least 3,000 years ago.

Some of the insects and lobsters since their revival have given birth to a new generation, the announcement stated. It did not give details of the method of revival.

The statement was read to the All-Union Conference of Scientists for the Study of Perpetual Frosts.

FLEET KILLS 66,000 SEALS

Rich Harvest Is Reported From
the North by Newfoundlanders.

ST. JOHN'S, Nfld., March 18 (Canadian Press).—Newfoundland's seal-hunting fleet was reported "in the fat" today as first returns of its catch were wireless home.

Somewhere along the northern front the sealers had discovered "seals as far as can be seen," and they were quickly reaping a rich harvest among the treacherous ice-floes.

Already since the season opened

AIR ROUTE TO EUROPE VIA ARCTIC PREDICTED

Sigismund Levanevsky, Soviet
Airman, Says Flights Are
Practicable and Shorter.

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That America and Europe will soon be linked by air routes across the Arctic wastes is the prediction of Sigismund Levanevsky, well-known Russian airman, who was bailed last year in the attempt to fly non-stop from Moscow to San Francisco, but hopes to make the flight this Summer. Mr. Levanevsky, who has just returned to New York after a country-wide study of American aeronautics, on May 30 told Dr. Ruth Gruber, first foreign correspondent to visit the Soviet Arctic, that he considered such a route entirely feasible.

"The Arctic is the most practicable as well as the shortest route between the two continents," he said. "It has received the special attention of the Soviet Union. Our work is to maintain constant communications through various parts of the region. It would require

Saturday 66,000 seals have been taken.

The Ranger, carrying 150 men, reported a catch of 15,000 on Gulf of St. Lawrence shores. On the Labrador front the Neptune reported a catch of 8,000, the Eagle 13,000 and the Ungava 15,000, while others had similar booty.

TINY SUPPLY SHIP OFF ON NORTHERN MISSION

Annual 10,000-Mile Voyage of
Battered Nascopie to Bring
Food, Cheer to Eskimos.

HALIFAX, N. S. (P).—The ice-scarred little supply steamer Nascopie is off on another mission to the northland, a mission which means the difference between living and existing to man in the great loneliness of the Arctic reaches.

It will be the 26th voyage of the Hudson's Bay Company into the northern seas.

The Nascopie last year traveled 10,000 miles into the ice-packed Arctic waters. This year she will go as far north as Craig Harbor, on the south coast of Ellesmere Island, 800 miles from the North Pole.

En route, the vessel touches at trading posts, missions, schools and Royal Canadian mounted police detachments before reaching the most northerly postoffice in the British Empire.

When the little adventurer left there was everything aboard that the northern dwellers need to sustain them for another year. Each trip she carries a varied cargo ranging from bathtubs to chewing tobacco.

Besides supplies, the Nascopie carries cheer to the north country. Last year motion-picture projection equipment went north with the boat and Eskimos were able to see themselves in the movies aboard ship after being photographed by the crew.

very little to extend these communications beyond the thirty-six miles of the Bering Strait to Alaska. When this is done it will be possible to send mail and passengers by this very short line instead of through Vladivostok and the Pacific."

The 34-year-old pilot, blond, tall and sturdy, has been made senior inspector of polar aviation for the Soviet Union. On his flight this Summer, according to Professor Otto Schmidt, head of the Northern Sea Route Administration, a survey is to be made of polar regions still unexplored, including the central portion of the ice cap. It is planned also to plant a permanent meteorological station at the North Pole.

"The disadvantage of the Arctic route," Mr. Levanevsky said, "is the hazard of ice. Here the rôle of aviation begins. Fliers scout through the region, finding the routes that are free from ice. They radio their positions to ships and to the polar stations lining the coast. Ships can then follow the open leads. Cargo ships have already made the passage."

The Russian flier who rescued James Mattern, round-the-world pilot, near Anadyr, Siberia, in 1933 and flew him to Nome, later took part in the air rescue of the 104 members of the Chelyuskin expedition.

RUNS ARCTIC STORE CHAIN

Native New Yorker Visits Seattle
After 27 Years Near Pole.

SEATTLE (P).—A chain store operator from near the North Pole arrived here the other day. Boris Magids came "outside" for the first time in twenty-seven years, leaving a business that draws customers from 200 and 300 mile distances.

Clad in reindeer parka and sealskin mukluks, he completed 2,000 miles of airplane travel to Juneau, Alaska, and another 760 miles by boat to Seattle. He lives at Kotzebue, on Kotzebue Sound at the Arctic Ocean, about 150 miles northeast of Nome—well within the Arctic circle.

"I came through Seattle in 1909 when I was just 16 years old," he said. "I was born and reared in New York City and was going to Nome to visit my brother Sam, who had a store there. And I have lived in the North ever since."

He built up a series of chain stores bordering along 1,000 miles of Norton Sound, Kotzebue Sound and the Arctic Ocean.

NATIVE SEAL HUNTERS PROFIT AS U. S. WARDS

Pribilof Islanders Now Live in
Modernized Home—Industry
Yields to Improvements.

SEATTLE. (P).—The natives of the Pribilof Islands, who share their lonely shores with a million and a half fur seals each Summer, are benefiting as government wards.

The seal industry, which brings increasing revenue each year to be shared by Japan; Canada and the United States, has yielded to modern methods. Now the seal is utilized right down to his "bark."

"The 380 natives of St. George and St. Paul Islands, whose men folk kill the seals and pelt them for us, under our supervision," said Harry J. Christoffers, superintendent of the Pribilofs, "are living under more favorable conditions each year."

"Our two doctors and teachers look after their health and education. They live in sanitary homes of concrete and wood. Children attend classes in up-to-date schools."

With the improvement of living conditions for the natives, the Bureau of Fisheries also reports improvements in sealing methods. Nearing extinction with only 250,000 in the herd in 1912, the seals numbered 1,550,000 in last Summer's "census." A total of 57,271, all "bachelors" 3 years old, were killed.

"Seal oil and meal are new by-products, first utilized this past year," Mr. Christoffers said. "The 'pulling' of the seals' furs, rather than taking them off with knives, is also more satisfactory. It gives lighter-colored skins."

Twelve white men supervise the natives in their work. In addition, twenty to twenty-five employees of a St. Louis dyeing and dressing plant go north each Summer to do the blubbering. The pelts are shipped south in barrels.

Canada now takes 15 per cent of the skins and Japan the receipt from the sale of another 15 per cent, under the treaty which outlawed "pelagic" or deep sea sealing.

FLYING TO ARCTIC PROPOSED IN 1826

Letter Found in Connecticut
Reveals Plan of Genet for
Building Polar Balloon.

A century before the polar regions actually were explored by air a scheme for such an undertaking was advanced by Citizen Genet, one of the storm centers of post-Revolutionary American history, according to an unusual letter by him which has come to light.

A short time ago in Connecticut, in a house which was partly submerged in the recent floods, Thomas F. Madigan of 2 East Fifty-fourth Street obtained this rare letter, in which Edmond Charles Genet proposed "the construction of an aerial vessel or aeronaut, by the means of which our fellow-citizens could in a very short time and very conveniently, explore all the polar circles."

The scheme, apparently, was to build a lighter than air craft, which could lift 60,000 pounds, "besides its decks and appendages," and which "would not cost more than \$10,000."

The letter was written in Albany, Jan. 15, 1826. By that time the once politically conspicuous Genet, first Minister of the French Republic to the United States, had become an American citizen, had married a daughter of Governor George Clinton of New York and settled down in retirement to busy himself with agricultural studies, industrial mechanics and scientific research.

Text of the Letter

The letter follows in part:

Albany, January 15, 1826.

Dear Sir

I have received your favour of the 15th instant and will lose no time to investigate the subject of your questions on the growth, Manufacture and economical utility of silk and I will transmit to you, as soon as possible, the result of my collections and recollections; In the meanwhile, permit me, Dear Sir, to present to you a copy of a Memorial which I have lately published on the upward forces of fluids and their applicability to several arts, sciences and public improvements; and also description of an improvement, which I think is very much wanted on the southern rivers, for the safety of steam boats.

I should wish also, Dear Sir, that another copy should be presented by your friendly hands to Mr. Clay who has so conspicuously signalled himself by his zeal for the promotion of the useful arts; And if a committee has been appointed on that very interesting part of the Presidents Message, relative to astronomy, to voyages of discovery and to a geographical survey of the Northwest coast of this continent, you would equally oblige me by supplying that board with another copy, in order to make them acquainted with the incontestible principles upon which rests the hope of succeeding in the construction of an Aerial vessel or aeronaut, by the means of which our fellow citizens

Coast Guard Finishing Vast Map of Ice Fields

WASHINGTON, April 2.—After twenty years' study, the Coast Guard is finishing a vast ice map which eventually may enable the Weather Bureau to predict icebergs as it now forecasts ordinary weather.

Rear Admiral Harry G. Hamlet, commandant, said today that data for this chart have been assembled by oceanographers every Summer for two decades at a dozen or so stations along Newfoundland, Labrador and North Greenland.

The cutter General Greene, now on its way north from Boston, has been ordered to carry on this charting in the Labrador current after completing duty off Newfoundland.

One of the legends the General Greene's staff is to try to solve, the Admiral said, is whether Winters of low barometric pressures in Iceland are followed by seasons of light ice.

could in a very short time, and very conveniently, explore all the polar circles, while the British and the Russians are enduring all sorts of difficulties and disappointment in the vain attempt of finding a passage to those unknown regions, through those impenetrable barriers of ice, which the decrement of the caloric rays of the sun towards the poles, and the relative attenuation of the galvanic fluid of our stratified globe, has uniformly created in the south and northern latitudes equidistant from the present equatorial line. It may be as Captain Franklin has reported it and as McKenzie and the Esquimaux Squaw Eligling confirm it, that the North polar sea is free from ice on the North coast of America, owing perhaps as we observe it in the air holes of our lakes and rivers to a local concentration of caloric emanating from the common temperature of the earth and sea, which are both above the freezing point, or from the operation of

some submarine volcano; But if in reality there is a polar sea free from ice, the only practicable method of penetrating there, is by Aeronautic means either of hovering above all the extent of that great unknown, or of transporting to its shores either from the Behrings or Melville straits, the materials necessary to construct better vessels than the crazy canoes used by Captain Franklin in his first expedition from the copper mine river in 1821 and 1822.

You will see, Dear Sir, by my special Memorial on aeronautics which terminates my specifications that the expense of an aeronaut capable of conveying and raising in the air 60,000 pounds besides its decks and appendages, would not cost more than 10,000 Dollars. That expense would be very small compared to the glory that our country would acquire by such an enterprise. If Congress, however, did not choose to embark in that plan it would be worthy of you and of many other patriotic gentlemen who are now assembled at Washington to carry it into effect by a private subscription as it is proposed by the Philosophical Society of New York.

WILL STUDY LABRADOR

Expedition to Survey Commercial
Breeding of Reindeer.

June 25

To determine whether reindeer breeding can be conducted on a commercial scale in Labrador, Frederick S. Lawrence, a member of the Explorers Club, announced yesterday he would lead an expedition into the unexplored northern and western inland parts of Labrador this Summer.

For the first time, he said, wheeled vehicles, including a truck equipped with tractor treads and a trailer with one-foot-wide steel wheels, would be taken into this territory.

The expedition, Mr. Lawrence said, would leave New York City about July 11, sail by steamer to Newfoundland and thence by mail boat to Labrador. It will return in October. The explorers will study the botany, meteorology and geology of the country, and will take photographs and moving pictures.

Alaska Eskimos Start All-Night Chess Tourney

KING ISLAND, Alaska, Jan. 31 (U. P.).—Eskimos of King Island, where an all-night session would last four months, were launched on their annual chess tournament today. They play through most of the four months of darkness. The Eskimo version of chess, said to have been introduced by Explorer Vilhjalmur Stefansson, replaces the king with a sea lion, the bishop with a walrus, the knight with a bear and the castle with an igloo. The chessmen are carved from walrus ivory.

3 Frenchmen Looking For Perfect Eskimos

All Under 30, They Start Trek
Across Greenland

PARIS, June 10 (UP).—A French polar expedition today started across the ice fields of Greenland to find a community of "perfect Eskimos." The party is composed of Paul Emile Victor, ethnologist; Dr. Robert Gessen, anthropologist, and Michael Perez, map maker and geologist. All are under thirty years old but already are experienced explorers, having lived among the Eskimos for more than a year.

They are making the trip from their west coast base to Port Angmasalik, or the eastern coast, by dog sled.

The following wireless message was received here just before they left their base: "Despite the June snow, everything is excellent. The dogs are in fine fettle and pulling heavy sleds without difficulty. We are leaving this morning and shall require about three months to reach the east coast. Meanwhile, we shall be unable to communicate with the outside world."

After the trek is completed and the party reaches Angmasalik, Gessen and Perez will return to France aboard the French oceanographic ship, *Pourquoi Pas*. Victor will remain in Greenland for another year, returning in August, 1937.

How Explorers Can Raise Vegetables at Pole Shown

Plants with abnormal growths and a new technique that makes possible the cultivation of fresh vegetables anywhere, even at the Poles, were among the "plant miracles" at the exhibition that opened Feb. 3 in Rockefeller Center.

Explorers may raise their own fresh tomatoes and garden peas in the arctic if they like. Dr. Zimmerman explained. He displayed some of the results of research at the Boyce Thompson Institute. Plants placed under a sodium vapor lamp grow with amazing rapidity. A gardenia in a dark basement after two weeks of the lamp treatment developed dozens of buds and flowered in all its scented beauty. The plant is one of those exhibited.

A greenhouse model of unusual design is exhibited by Dr. John M. Arthur, bio-chemist of the institute. In the greenhouse are plants growing without any soil. A nutrient fluid, composed of minerals, salts and other plant foods, at the bottom of the glass containing the plants provides all the nourishment the growing plants need. The greenhouse is heated by electric lamps with thermostatic control, and the plants grow at two or three times their normal rate.

Derelict Vessel Is Locked in Arctic Ice; May Be a Whaler Lost Fifty Years Ago

BARROW, Alaska, March 3.—Identity of a derelict ship locked in the Arctic ice far off Point Barrow puzzled both natives and whites today, but some believed she might be one of seven stanch whalers which sailed into the northern seas fifty years ago and never returned.

The vessel, with two masts standing, was first sighted a week ago. Eskimos attempted to reach it but failed. Among them was Claire Oakpeha, who ran fifteen miles across the Arctic tundra to Barrow last Summer with the news of the Will Rogers-Wiley Post plane tragedy.

Observers at first believed it was the ill-fated fur trading ship *Baychimo*, abandoned four years ago

after being trapped in the ice. Oakpeha and Bill Solomon, another native, insisted, however, it was not.

Charles D. Brower, veteran whaler, said there was only a bare possibility it might be one of the old-time oak built ships, famous for their ability to resist the ice pack.

"It is fifty years since the seven great whaling ships floated out into the unknown and became fast in the ice, with a hundred or more men aboard," he said.

"It is hardly possible that one of those ships could have survived until now, but strange things have happened in the ice pack."

The mystery of the derelict may be solved when the ice pack clears this Summer.

Tropic Fever in Siberia Traced To Mosquito That Survives Cold

Soviet Scientists Track Down Hardy Insect When Members of Group Studying Frozen Soil Area Are Stricken—Institute to Paint Stripes on Seals to Find Out Where They Go.

MOSCOW, Feb. 16.—A tropical fever spread by mosquitos that are able to survive bitter Siberian Winters is among the by-products of studies now being made of eternally frozen soil by Soviet scientists.

It was in this region close to the Manchurian border and in the latitude of Southern Canada, but far colder because of the absence of warm air currents, that the eggs of infinitesimal shrimps frozen for thousand of years recently were dug up, thawed and hatched into living creatures.

The presence of the mosquitos was disclosed to this correspondent by Professor Michael Sumgin of the Academy of Sciences of the Soviet Union in discussing the purposes of Soviet work on the frozen soil. Professor Sumgin heads the Eternal Frost Commission of the geological section of the academy.

Several workers with the expedition at Skovoradina, on the Amur River, came down with a fever identified as of a tropical variety carried by mosquitos. A watch was kept and the mosquitos were found. Details of this strange discovery have been turned over to the Medical Institute for study.

The work being done on frozen soil has a practical basis—discovery of how best to utilize the natural resources in which the Soviet north is rich.

Forty-seven per cent of the immense area of the Soviet Union is frozen all the year round below a depth of six feet, said Professor Sumgin. In European Russia eternally frozen soil occupies a small space above the Polar Circle. East of the Urals, however, this area extends further south, reaching as low, in the Manchurian region, as Lat. 46.

"The presence of frozen soil has a great effect on the economic development of these enormous regions," said Professor Sumgin. "Solution of the agricultural problem is proceeding rapidly, wheat now being successfully grown above Lat. 60. But the problems of industrial construction, housing, excavation and roadbuilding necessary for the exploitation of these now sparsely inhabited regions are still unsolved.

"Heretofore buildings constructed with the greatest care over frozen soil have been damaged and even wrecked by the ground under them. The heat within such buildings often softens the ground beneath, causing the buildings to subside unevenly. Roads swell up and crack. "Great riches for the Soviet Union will attend a solution of the prob-

lem of how to build on frozen soil. The natural resources of the frozen soil areas include gold, platinum, coal, ores, graphite and many others. Economic development demands the building of cities, factories, railroads, highways, power plants and mines. There can be an especially big development of power plants on the north's many big rushing rivers."

Institute to Trace Seals.

Seals straying into the White Sea stand a chance of emerging striped like barber-shop poles through a plan announced today by the Arctic Institute.

White seals, which are much hunted by the Soviet fisheries for their skins, oil and so forth, virtually disappear except in February, March and April, when they appear in the straits of the White Sea. The Arctic Institute wishes to know where they spend the rest of the year and where they breed, with the double object of extending the hunting period and avoiding endangering their increase.

The institute shortly will send out an expedition to catch 400 white seals, affix metal tags to their tails and paint them with black stripes, so they may be traced.

Heroine of Wrangel Trek Found Near Matanuska

Sole Survivor of Expedition Is Eskimo Homesteader

ANCHORAGE, Alaska, Feb. 13 (AP).—Ada Blackjack, heroine and lone survivor of the ill-fated Wrangel Island expedition of 1920, was found today homesteading with two sons at Ek-lutna, near the Matanuska colony. The Eskimo woman who lived through a grueling three-year experience that killed her four male companions has recovered from a long illness and is enjoying obscurity, reported George A. Dale, Indian Affairs official. She is now thirty-seven years old.

The party went to Wrangel in 1920 to claim it for Canada. A relief sloop was forced back by massed ice floes in a 1922 rescue attempt. Three of the men—Allan Crawford, of Toronto; Frederick Maurer, of New Philadelphia, Ohio, and Milton Galle, of New Brunasfield, Tex.—died in an attempt to cross the ice on sleds to Siberia.

The fourth, Lorne E. Knight, of McMinnville, Ore., succumbed to an illness despite the brave efforts of Mrs. Blackjack, who chopped firewood, hunted birds' eggs and seal and tended a trap line.

She was rescued in August, 1923, by Captain Harold Noice, Seattle explorer, who found her on the island with her pet tomcat, Vic.

NAZIS TAKE UP WHALING

Fleet of Vessels to Cut Imports of Much-Needed Oil.

HAMBURG, Germany (AP).—After an interim of about seventy years Germany has decided to return to whaling.

Scarcity of foreign currencies is held chiefly responsible for this decision as, according to statistics,

Landing Fields of Ice Seen by Flier in Arctic

By The Associated Press.

MOSCOW, May 22.—A Soviet aviator who returned today from a flight that took him within 450 miles of the North Pole, said he believed there were natural, ice-floe landing fields at the top of the world.

These large and smooth floes, Mikhail Vodopyanoff, the aviator, said, should permit polar stops on Arctic flights. He observed the floes while leading an aerial expedition to Franz Josef Land.

With two companions he flew from Tikhaya Bay in the Franz Josef group to within 450 miles of the Pole, but did not land. His plane was the first to cross the Barents Sea in a straight line from the continent to Franz Josef Land.

The aviator said he thought flights from Franz Josef Land to the Pole would be possible in the near future.

Germany has been buying annually from 150,000 to 200,000 tons of whale oil or approximately half of the world production of about 400,000 tons.

A Dusseldorf firm is equipping a fleet of whalers; while the well-known industrialist Walter Rau signed a contract for the construction of a 22,000-ton whaler. This boat will be the last word in whaling ships, it is said, and its modern equipment will enable its crew of 300 to work up daily 2,000 tons of whales into oil and fertilizer.

It is estimated that Germany's new whaling fleet will be able to supply about one-fourth of the country's demand for whale oil.

RUSSIANS WILL SEEK ANIMALS IN THE ICE

Expedition to Go to Siberia as a Result of the Success in Reviving Frozen Crustacea.

MOSCOW, March 31.—The decision to hunt for older and higher forms of life in the frozen soil of the Ice Age that still grips Northern Siberia was explained today by Professor Peter Keptereff, who recently returned from the northern border of Manchuria with minute, shrimp-like creatures hatched from eggs that had been frozen 1,000 to 3,000 years.

The offspring of these long-dormant eggs are now going through normal life cycles in the bio-geo-chemical laboratory of the Academy of Sciences here. They are now in the tenth generation and are swarming in hundreds.

Plans for the new and more ambitious expedition further north, in Yakutsk were discussed at a conference of scientists of the Eternal Frost Commission. In Yakutsk the Ice Age is just nearing its end. One yard below the surface are thick layers of ice, which have been there unchanged for many thousands of years. The new expedition will dig through this ice to the frozen soil below in the hopes of finding animals, some new extinct, that lived in the quaternary period.

The peat soils there are expected to be rich in organisms in a state of suspended life. There is little expectation of finding larger animals in a frozen state capable of being revived. However, the success in reviving the tiny shrimps, which contain hearts and other complicated apparatus, has prompted the scientists to say that none can tell now what is the limit of the life forms capable of resuming life.

Soviet Expedition Will Hunt Lost Island That Has Long Appeared on Arctic Charts

By HAROLD DENNY

MOSCOW, April 20.—A new search for Sannikoff Island, north of New Siberia, which explorers have long been unable to find, though it has been marked on polar charts for more than a century, will be made by the Soviet ice-breaker Sadko on its thirty-sixth voyage through northern seas, which is soon to begin.

This famous old ship, which lay under the waters of the White Sea for seventeen years before being raised, reconditioned and sent out on Arctic explorations, made a similar investigation of mysterious "Gilles Land," north of Spitzbergen, last Summer and apparently established that the island was a polar mirage.

Sannikoff Island is marked on Arctic maps as between 78 and 80 degrees North Latitude and 140 and 150 degrees East Longitude. It was supposedly seen in 1810 by a Siberian merchant named Sannikoff, who described it as a land of high mountains. He could not approach closer than twelve miles, he

reported, because of a belt of water all around it.

Fridtjof Nansen, in his famous drifting voyage on the Fram in 1893, passed in this vicinity. Birds hovered over his masts, indicating that land was near, but Nansen did not see it. An expedition was sent out to find it in 1900, but the ship was wrecked and most of its members perished.

The Soviet polar authorities assert that many indications point to the existence of land. Therefore the Sadko has been assigned to investigate in the course of a voyage eastward through the Novo-Sibirsk Islands.

The Sadko's expedition is only one of forty-six that the Soviet Government is sending into the Arctic this year in the ever-expanding program of exploration, scientific research, development of northern sea and air routes and exploitation of natural resources. They will travel on three icebreakers, studying ocean currents and meteorological conditions, hunting coal, iron and rare metals and in investigating ways to promote an increase of seals and reindeer.

Russian Flyer Sights Two Old Arctic Bases

**Vodopyanov Finds Food Left
in '01-'04 by Baldwin
and Fiala Expeditions**

By The Associated Press

MOSCOW, April 29.—Mikhail Vodopyanov, Soviet "hero" flyer, prepared tonight for a new aerial thrust into the Arctic wastes after rediscovering remains of two American expeditions on Rudolf Island. He was the first person to visit the island since the explorations of the territory north of Franz Josef Land in 1901-'02 by Evelyn B. Baldwin and in 1903-'04 by Anthony Fiala.

Vodopyanov said he found huts used by the Baldwin expedition, still containing a stock of food. The shelters of the Fiala expedition were buried under a solid block of ice, he reported by radio.

His next exploration attempt, in which he hopes to penetrate as far north as 85 degrees, probably will be made tomorrow, he says.

American Expedition Recalled

The Baldwin and Fiala expeditions to the Arctic were financed by William Ziegler, baking powder manufacturer, who declared he would "plant the American flag at the North Pole" if it took his entire fortune.

The Baldwin expedition proved a failure because its sledges were destroyed during explorations. Its members returned to Norway in August, 1902, two weeks after a relief ship had sailed.

Ziegler and Baldwin split over differences and Fiala was named to head the second expedition. In the next two years Fiala penetrated far to the north, and brought back much valuable scientific data on the Arctic region. When his relief ship failed to meet him in 1904 he and his men retreated from their advanced position and sledge in one of the classic over-land dashes of Arctic exploration history.

Fiala, now a resident of Brooklyn, said yesterday that the bulk of the personal effects his expedition left behind must still be in the ice-bound huts.

Baldwin was killed last year in an automobile accident in Washington. Dr. C. Ziegler died in 1905 before Fiala returned to civilization.

Former Byrd Aide Dies.

BAYONNE, N. J., Feb. 18.—Frank McPherson, 56 years old, chief engineer of the Eleanor Bolling supply ship of the 1928 Byrd Antarctic Expedition, died here today in Bayonne Hospital. After an autopsy, it was said McPherson had a heart ailment, with pneumonia and alcoholism contributing causes. He operated a tavern at 14 East Twenty-third Street, Bayonne. His mother, a brother and a sister survive.



N. Brock Photo.

**HARRY WHITNEY,
At the height of his career**

HARRY WHITNEY, 62, EXPLORER, IS DEAD

**Hunter of Big Game Was With
Peary's Ship—Became Cen-
ter of Polar Controversy.**

MONTREAL, May 20. — Harry Whitney of New York, noted explorer and big game hunter, died this afternoon at the Montreal neurological Institute. Relatives are making arrangements to have the remains taken home for the funeral service and burial. He came to the local hospital to undergo an operation about a week ago. He was 62 years old.

Had Arctic Base Near Cook

In the latter part of 1909 and through 1910 Harry Whitney was the center of a bitter controversy about the North Pole. It was in 1909 that Admiral Peary and Dr. Frederick A. Cook both returned from the Arctic and both made claims to discovery of the North Pole. It was when doubt was cast on Dr. Cook's claim that Mr. Whitney entered the controversy.

He had gone to the Arctic on the Peary ship, Roosevelt. He was left at Etah, in Greenland, with a reserve supply of stores and two members of the Roosevelt crew. It happened that, not far away, Dr. Cook had also established a base of supplies.

Mr. Whitney wanted to do some Arctic hunting. He made friends with the Eskimos and put in a winter hunting, getting polar bear, muskox and other animals. On April 18, 1909, he saw three figures struggling over the ice at a distance. He had a sled harnessed, went out to meet them, and found one to be Dr. Cook. The other two were Eskimos.

Dr. Cook spent two days at his base, Annotok, near Etah. He left

LADY SHACKLETON DEAD IN ENGLAND

**Survived the Noted Antarctic
Explorer 14 Years—One of
Their Sons in Field.**

LONDON, June 9.—Lady Shackleton, widow of the Antarctic explorer, died today at Hampton Court Palace. For some time she had been in ill health. She survived her husband by fourteen years. She leaves two sons and a daughter. One son, Edward, has already made a trip to the Arctic.

The King granted her the use of apartments at Hampton Court in recognition of her husband's achievement.

Lady Shackleton's death recalls the tragedy of her famous husband, Sir Ernest Henry Shackleton, who died on Jan. 5, 1922, on board the steamship Quest, on which he was making another expedition into Antarctic regions. Sir Ernest announced before his departure from London that it was to be his last trip—"My swan song." His body was taken to Montevideo, and was expected to be sent to England, when Lady Shackleton, in the belief that she was fulfilling her husband's wishes, decided that burial should be on South Georgia Island, not because he had died there but because it was the gateway to the Antarctic, the scene of his explorations.

On Feb. 15, funeral guns boomed in Montevideo as the explorer's body was carried aboard the British steamship Woodville, which took him into Antarctic seas. Lady Shackleton's wreath bore the words "The Boss," the name by which he



Lady Shackleton, from a photograph made several years ago.

was most intimately known. News of her husband's death reached her at Eastbourne, England, where she had resided for a considerable time and where she had been prominently identified with the public life of the town.

Lady Shackleton was the former Emily Mary, second daughter of the late Charles Dorman of Towngate, Wadhurst, Sussex, a London merchant. She was married to the explorer in 1904. He was knighted on his return from his expedition on the Nimrod in 1909. Lady Shackleton's sister, Julia Frances, is the wife of Dr. Charles Seroles, famous Belgian philosopher and writer.

instruments, clothing and other effects with Mr. Whitney and went on to Upernivik, where he expected a boat.

Ordered Vessel Outfitted

Mr. Whitney had ordered that a vessel be outfitted and sent for him since he did not want to wait, uncertainly, for the return of Admiral Peary's ship, Roosevelt. The Roosevelt came first, however, and he decided to return on it.

He made only one statement, and it was that Dr. Cook had told him of reaching the North Pole and sworn him to secrecy. While the fight waged over and around him, he kept quiet. The following year, with Captain Bob Bartlett, who had commanded the Roosevelt, he returned to the Arctic for hunting. He went again on two successive Summers. Each time there were reports that he would seek the cache of Dr. Cook's instruments—which supposedly contained records that Mr. Whitney said he had never seen.

Mr. Whitney was born in New Haven, Conn., Dec. 1, 1873. He was the son of Stephen Whitney and Margaret Lawrence Johnson Whitney.

He was especially fond of big-game hunting in the Rocky Mountains, Alaska and the Arctic. He continued to be a member of the parties which Captain Bob Bartlett took to the Arctic until 1930, which was his last trip.

On many of these trips he brought back specimens for the Philadelphia Academy of Natural Science and the Philadelphia Zoo. Silver Fish, a polar bear, was presented by him to the Bronx Zoo, having

been captured during the Arctic trip of 1910.

On Jan. 15, 1916, Mr. Whitney married Miss Eunice Chesebrough Kenison in New York.

Upper Arctic Air Found Warm All Polar Night

**Dirigibles Can Fly at 1½-Mile
Height, Says Russian**

MOSCOW, April 23 (AP).—A discovery that an upper layer of the Arctic atmosphere retains a warm temperature throughout the long polar night was described today before the Academy of Sciences by Professor P. A. Molchanov, head of the Slutsk Aerological Institute.

Professor Molchanov, who has been conducting experiments with automatic radio balloons, said the warmth apparently was independent of solar radiation and might be due to a movement of masses of light, warm air toward the poles. This movement he ascribed to a centrifugal effect of the earth's revolution upon itself.

He said studies made at the polar station at Tikhaya Bay, on Franz Josef Land, had disclosed that a layer of air higher than two kilometers (one and one-fourth miles) had an average temperature 10 degrees centigrade higher than that of air of a similar altitude in temperate zones.

This fact, combined with a more favorable wind velocity at a higher level, would make that the most suitable level for trans-polar air travel, he said, expressing the opinion that the dirigible was the aircraft most suitable for Arctic use.

